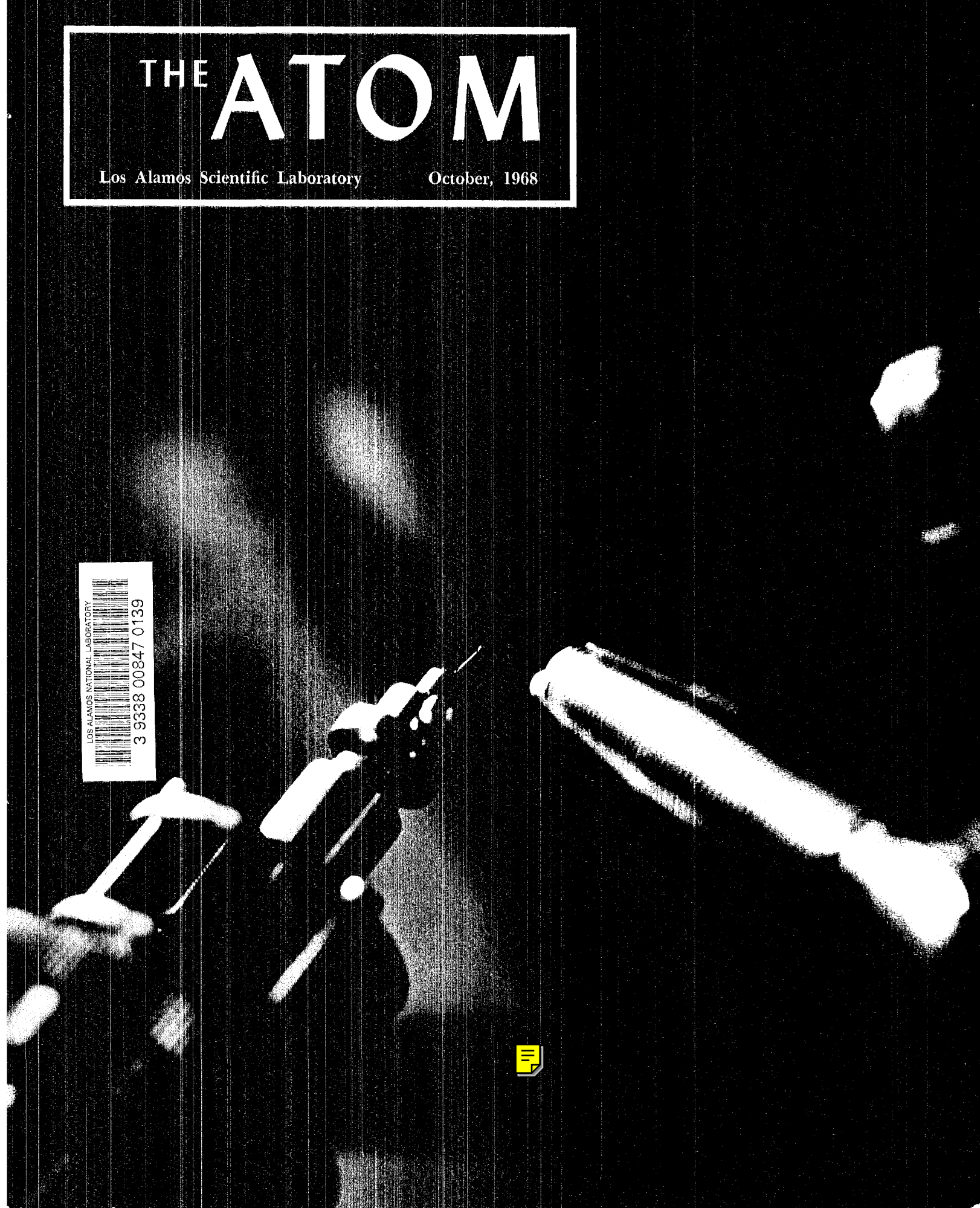
THE ATOM

Los Alamos Scientific Laboratory October, 1968



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THE ATOM

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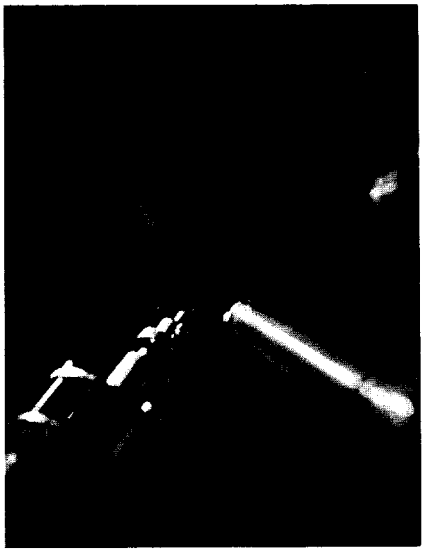
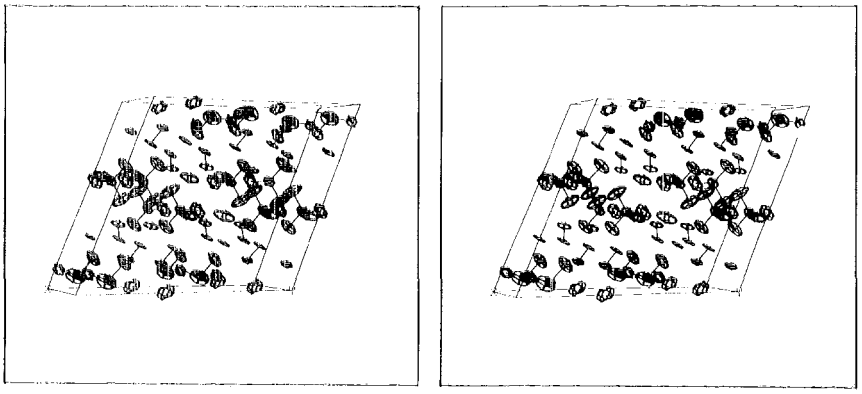


COVER:
Our cover photo this month is one that was taken in conjunction with others to illustrate Bob Masterson's story on Computer-Controlled Crystallography which begins on page one. It is a closeup of a goniometer holding a glass fiber on the tip of which is attached a crystal sample much smaller than the head of a pin. The tapered cylinder at right is the collimator for the radiation detector used to measure the diffracted x-ray intensities. Above it is the barrel of a microscope used to check the position of the crystal.

Computer-Controlled



This stereoscopic drawing, produced by a computer and an automatic plotter using x-ray diffraction data, shows a portion of a crystal of hydrazinium fluoborate ($NH_2NH_3BF_4$). When viewed stereoscopically the right and left drawings merge to give a single 3-dimensional representation of the atomic structure of the crystal. The fluoborate group consists of a single boron atom surrounded by four fluorine atoms in a tetrahedral arrangement. The pairs of atoms represent nitrogen atoms in hydrazinium groups. The hydrogen atoms associated with the nitrogen are weak scatterers of x rays and couldn't be detected in this study. To see the crystal in 3-D hold an 8-inch-high piece of cardboard vertically between the two drawings. Then view the drawings from directly over the cardboard so that the left eye can see only the left drawing and the right eye the right drawing.

Crystallography

By
Bob
Masterson

The crystal structure section of the CMF-5 plutonium metallurgy group recently acquired a computer-controlled single-crystal diffractometer which combines a Picker x-ray machine and diffractometer with a Digital Equipment Corporation PDP-8 computer. This computer-diffractometer linkage, developed by W. R. Busing and co-workers at the Oak Ridge National Laboratory, not only allows data to be obtained several times faster than could be obtained manually but also eliminates operator error from the many angle settings required for a crystal structure determination.

Don T. Cromer, section leader, Allen C. Larson, and Raymond B. Roof, Jr. are using the computer-controlled diffractometer to study intermetallic compounds, mostly those of plutonium. Plutonium compounds, important in many nuclear research and development programs, are available to very few crystallographic laboratories in the world.

This technique, however, is not limited to the study of metals and intermetallic compounds but is applicable to the many other types of crystalline materials found in nature including most solid inorganic and organic chemical compounds and many organic materials which are partly crystalline, such as wood, muscle fibers, and hair.

A crystal consists of a regular three-dimensional arrangement of atoms made up of a repeated pattern called the unit cell. Crystal structure determ-

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inations involve finding the arrangement of, and distances between, the atoms in a unit cell. This knowledge sheds light on the nature of chemical bonds and leads to a better understanding of the chemical and physical proportions of specific materials.

The distances between atoms in crystals are of the order of one to two angstrom units (an angstrom is 3.9 billionths of an inch), and in order to resolve details on this scale "light" waves of very short wavelengths, that is x-rays, are needed.

The x-ray diffraction method is, in effect, a kind of powerful microscope. In an ordinary microscope visible light is scattered by the specimen and then focused and recombined by a lens to produce an enlarged image. X rays cannot be focused in this manner so an indirect approach is used. The intensities and direction of the reflected x rays are measured, and then, instead of a lens, certain mathematical techniques are used to recombine these reflected x rays to construct an image of the unit cell.

Modern crystallography can be said to have begun with the discovery in 1912 by Max von Laue that the still not-fully-understood x rays were diffracted, that is to say scattered, by a crystal. This was one of the great triumphs of science in the first half of the Twentieth Century since it not only proved that x rays are just a more energetic form of light but also verified that crystals have regular internal atomic arrangements which account for their symmetry and beauty.

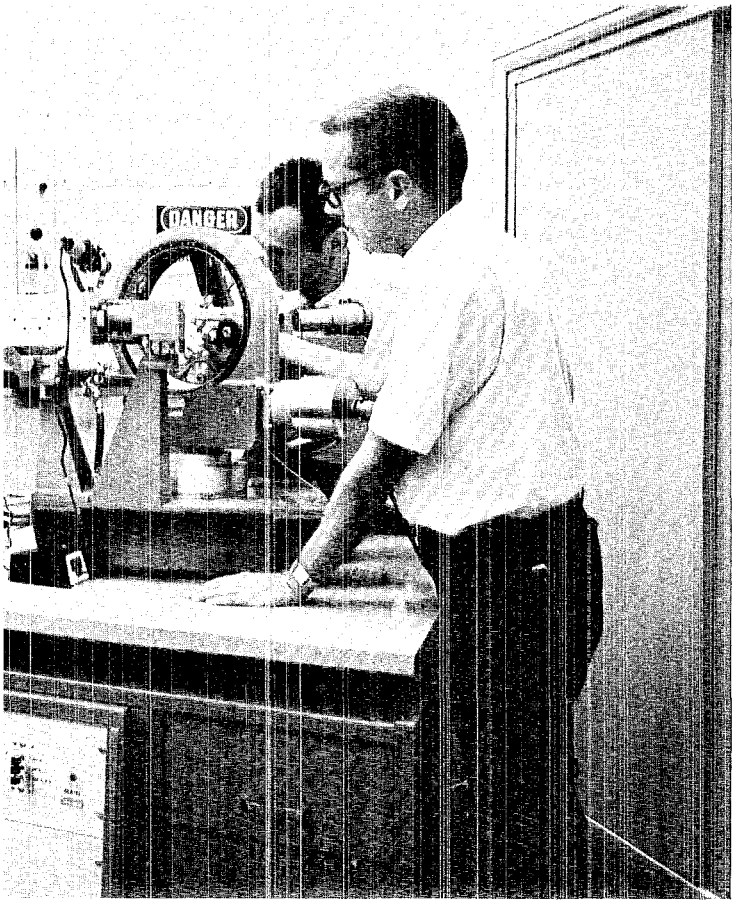
The x-ray diffraction patterns of spots produced on photographic film by a crystal result from x rays being scattered by planes of atoms in the crystal. The wavelets scattered by the atoms in each plane combine to form a reflected wave. These reflected waves reinforce or cancel each other to form the diffraction pattern whose intensity and spacing is a function of the arrangement and spacing of the atoms in the crystal unit cell.

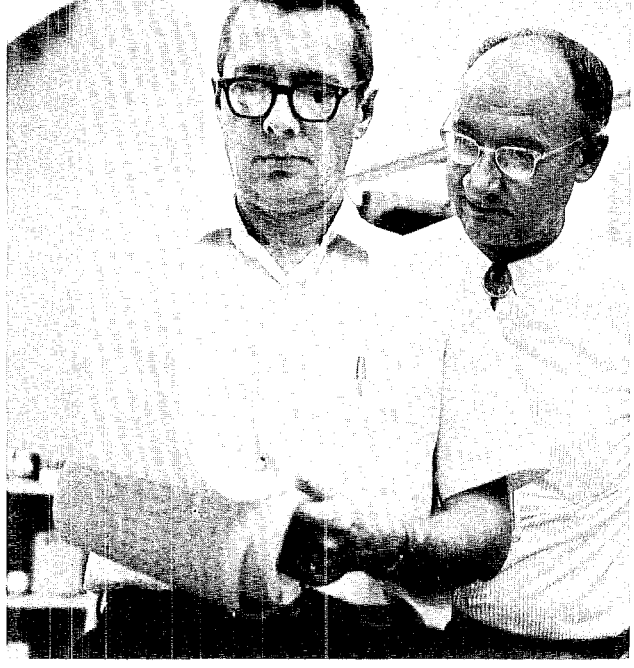
The English scientific father-and-son team of W. H. and W. L. Bragg very quickly followed up von Laue's experiments and worked out the relationships between the structure of the unit cell and the x-ray diffraction pattern. Within a few months of von Laue's original experiment the Braggs had worked out the structure of some relatively simple crystals such as sodium chloride, potassium chloride, zincblende, fluorspar, and diamond.

A few years later, in 1916, the value of x-ray diffraction was enhanced when Deybe and Scherrer in Germany showed that a characteristic x-ray diffraction pattern was produced by a sample of finely-divided, or powdered crystal. This provided a powerful tool for identifying and studying crystals not available or difficult to obtain in single-crystal form, and the so-called powder method is in use, primarily to identify unknown compounds by matching their x-ray diffraction pattern with that of a known powdered crystal sample, by many scientists all over the world including Finley H. Ellinger in CMF-5.

Since these beginnings in 1912 and 1916 x-ray diffraction has been developed and refined and used to find and measure the detailed crystal structure of literally thousands of alloys and compounds including the double-helix structure of the deoxyribonucleic acid (DNA) molecule, a discovery for which Watson, Crick, and Wilkins received the Nobel Prize in medicine and physiology in 1962.

The new diffractometer is a complex and precise instrument consisting of a crystal mounting, an x-ray source, and an x-ray detector all linked





Don T. Cromer, left, shows the PDP-8 computer printout of a recent measurement to CMF-5 Group Leader Fred W. Schonfeld.

Raymond B. Roof, Jr., left, Allen C. Larson, and Cromer are shown with the computer-controlled single-crystal diffractometer. The PDP-8 computer is at left. The Picker x-ray diffractometer is on the right with the goniometer, x-ray source, and radiation detector assembly sitting on the counter top.

together mechanically so that their relative positions can be determined and adjusted very accurately. The crystal mounting, which holds the very small sample (about 0.005 inch in diameter) is called a goniometer. The crystal can be rotated about three axes, by means of three angle settings, to position any of the crystal planes (with respect to the x-ray source and detector) so that a reflection occurs.

The x-ray tube produces a 0.02-inch-diameter beam of x rays by bombarding a molybdenum target with electrons. The detector is a thallium-doped sodium iodide scintillation crystal connected to a photomultiplier tube. X rays striking the scintillator cause minute flashes of light. The photomultiplier tube converts the light flashes into electrical pulses and amplifies these pulses so they can be recorded electronically. This technique of digitally recording the reflected x-ray intensities replaced photographic methods several years ago for making precise intensity measurements. The original method of recording the entire diffraction pattern at one time on film is still used, however, to identify unknown crystal samples and to provide approximate crystal structure data required for the exact measurements using the scintillation detector diffractometer.

With the diffractometer, using preliminary information obtained from a photographically recorded diffraction pattern, the crystal is positioned so that the detector "sees" and records the reflections from the crystal planes. For each crystal studied, from 500 up to several thousand individual reflections are measured, each with the crystal in a slightly different orientation specified by the three angle settings of the crystal mounting.

Before the arrival of the computer-controlled diffractometer the individual angle settings were computed on the central computing facility's IBM 7094 computer and printed out on a set of cards often amounting to a "deck" over a foot long for a single experiment. Each of these sets of angles had to be set by hand (to an accuracy of 0.005°) for each reflection measurement. Even at

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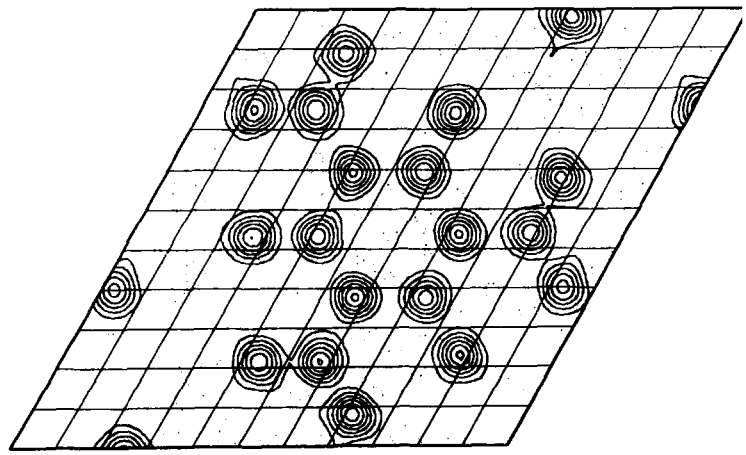
a rate of one setting every two minutes each experiment took many hours and required the attention of a researcher who became prone to error after a few hours of this tedious work. These errors would show up when the results were processed and would require remeasurement of the faulty data points. In addition, the amount of work that could be done was limited by the manpower available which was not sufficient to keep a diffractometer operating at full capacity.

The new PDP-8 computer has eliminated this drudgery and human error from the measurements. Instruction programs are prepared in the form of perforated paper tape using the Maniac II computer of the central computing facility (CCF). These instructions are fed into the PDP-8 by means of a tape-reading teletypewriter, the keyboard of which can also be used manually by the operator to control the computer and diffractometer. The PDP-8 then follows these instructions to control the diffractometer through an entire experiment, automatically making the hundreds of crystal angle settings and recording and punching out on paper tape the x-ray reflection data. The device can be turned on and left to run unattended overnight or over a weekend, therefore greatly increasing the overall rate of data acquisition. In addition, since the computer can make the individual angle settings much faster than a person can, specific experiments take much less time making possible heretofore unfeasible studies of certain crystals that undergo rapid chemical decomposition.

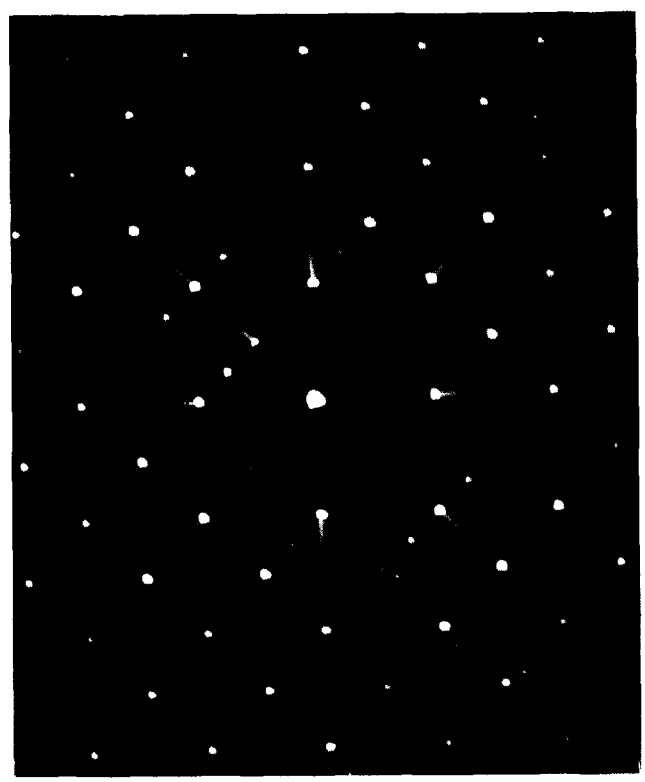
The PDP-8 is something of a demonstration in itself of the recent rapid advances in computer technology. Although it is a stock item which costs only $18,000, weighs only 250 pounds, and is not much bigger (70 x 22 x 24 inches) than a large filing cabinet, the PDP-8 is a more powerful computer than the room-sized, hand-built models costing hundreds of thousands of dollars which were the ultimate in computers a few years ago. The PDP-8 has a memory capacity of 4,096 12-bit words (expandable to 32,768 words), can perform an addition in 5 microseconds, and can handle programmed input/output data transfer rates as high as two million bits per second.

As was the case in the pre-PDP-8 days, the x-ray data from the diffractometer is reduced and analyzed by the CCF, which converts the x-ray



This drawing, produced by Howard H. Cady of GMX-2, shows a Fourier electron-density map of a section through the molecular plane of a crystal of triaminotrinitrobenzene. The electron-density contour lines show the atomic structure of the compound. Such maps result from the complex mathematical analysis of x-ray crystal diffraction measurements.

This strikingly beautiful diffraction pattern was produced by x rays being scattered by a tiny crystal of cesium alum —$CsAl(SO_4)_2 \cdot 12H_2O$. The crystal structure section of CMF-5 is using the technique of x-ray diffraction to determine the atomic structure of a variety of alloys and chemical compounds.



intensities into information on the relative positions of, and distances between, the atoms making up a particular crystal.

Modern crystal structure analysis clearly requires much use of computers. It has been estimated that crystallographers, who constitute much less than one per cent of the scientific community, use perhaps three to four per cent of the total scientific computer time throughout the world. It is worth noting that the personnel of the CMF-5 group have pioneered in crystallographic computing, and their computer programs are in use in many laboratories the world over.

Using a computer code developed at Los Alamos the results of the structure analysis can be converted into an instruction tape and fed into a plotter which will automatically prepare stereoscopic (3-D) drawings of the crystal structure. Each 3-D drawing, which takes only a few seconds to complete, is produced electronically on the face of a cathode ray tube (in the same way a TV picture is produced) and then photographed on 35mm film. These stereo pictures replace ball-and-stick molecular models which are clumsy, take up lots of space, and are time consuming to build. The x-ray intensity data can also be processed to produce an electron density profile, a kind of contour map showing the positions of atoms in the crystal under study.

Although the basic programs for the computer-controlled diffractometer came from Oak Ridge, the work of adapting them to the use of this PDP-8 and providing supplemental programs as required was done by Larson, of the crystal structure section, who recently returned from a one-year professional research and teaching leave in Cambridge, England. The "interface," the electrical interconnections between the computer and the diffractometer, for this setup, was constructed by James B. Deal, Jr., of the CMB-7 instrumentation and engineering development group, who continues to provide technical support.

Two other groups at LASL are interested in crystal structure—GMX-2, primarily concerned with organic explosives; and CMF-4, concerned with inorganic actinide compounds—and the

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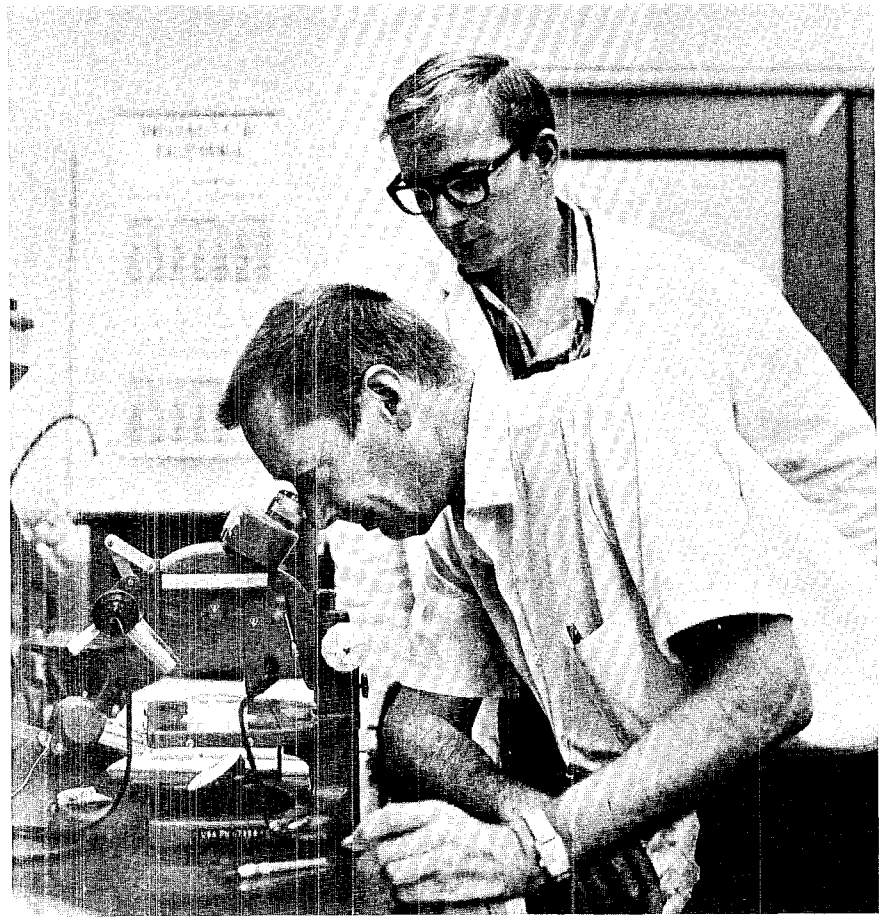

Postdoctoral Researcher Rick Williams, right, watches as Cromer uses a stereoscopic microscope to look at a group of crystals in which he hopes to find one of the proper shape and size for study by x-ray diffraction techniques.

James B. Deal, Jr. of Group CMB-7 runs a test program through the PDP-8 to check its operation.

Vernon O. Struebing of CMF-5 uses an electric arc melting furnace to prepare a plutonium alloy for crystallographic study by the crystal structure section.

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PDP-8 setup is available to these groups for their own use should they have need of it.

The crystal structure section occasionally does crystal analyses to order in support of some LASL programs, but mostly its members have been studying those compounds of interest to them produced by others in CMF-5 as part of the group's general program of plutonium metallurgy. The metallic alloy samples, plutonium and otherwise, are prepared by Vernon O. Struebing of CMF-5. Most of the other crystals studied are prepared by the crystal structure section. (The plutonium samples are sealed with a coating of model airplane cement to prevent possible contamination of the equipment.)

With their new computer-controlled diffractometer Cromer, Larson, and Roof have the potential for studying crystals of a complexity far greater than they could previously analyze. This system has even made practical their study of compounds, such as the giant molecules of proteins, which would require more than 10,000 x-ray reflection measurements, and they someday hope to undertake such studies, perhaps with the assistance of a molecular biologist. Whether they do or not, it is still clear that the addition of the computer-controlled diffractometer is an important improvement to CMF-5's and LASL's resources for scientific research.

First Annual Los Alamos Hill Climb

For the first time in its history the Sports Car Club of America held its Midwest Division Inaugural Solo I Hill Climb event at Los Alamos under the auspices of the Rio Grande Region.

Via Encantada I, as it was called, is the Spanish translation of Enchanted Road, a most suitable title since it was held in New Mexico, The Land of Enchantment.

Twisting and turning through 15 curves on the scenic mountainous Camp May Road were 15 cars racing against time in five classes. Each entrant drove his car up the 1.9-mile course 10 times in the two-day event held during the first weekend of September. Four runs on Saturday and three Sunday morning were for practice, but Sunday afternoon the drivers pushed harder on the accelerators for three against the clock. Each car's fastest time was recorded for competition.

Gene Willbanks of Los Alamos, an employe of the Scientific Laboratory's Group G-4, driving his celebrated Unser/Chevrolet became "king of the hill" after finishing the climb in the fastest time of any of the classes. The car, built by Bobby Unser, Albuquerque's Indianapolis Speedway 500 winner, finished and established a course record of 1:54.7. Unser drove the car in the 1966 Pike's Peak race, and loaned it to Italian-born Mario Andretti, the 1965 and 1966 United States Auto Club champion, who drove it in the same race in 1967. Willbanks, after acquiring the car from Unser, entered the Pike's Peak race in 1968.

The only other car in the modified class was a Dodge Super-Mod driven by Clyde Alexander, Espanola, who finished in 1:58.7, a flat four seconds behind Willbanks.

Bill Randle, a Denver driver, topped the four entries of the large sport car class with a time of 2:8.3 in his Porsche 911S. Six seconds behind him (2:14.4) was Albuquerque's Dave Preston in a Corvette. Third place, with a time of 2:22.3 went to Dr. Robert Barnard of Aspen who drove a Porsche SP. Bob Henson, a member of Group T-2 at LASL was next with 2:30.7 in his Alfa.

Dave Morrison of Albuquerque was first in the small sport car and sedan

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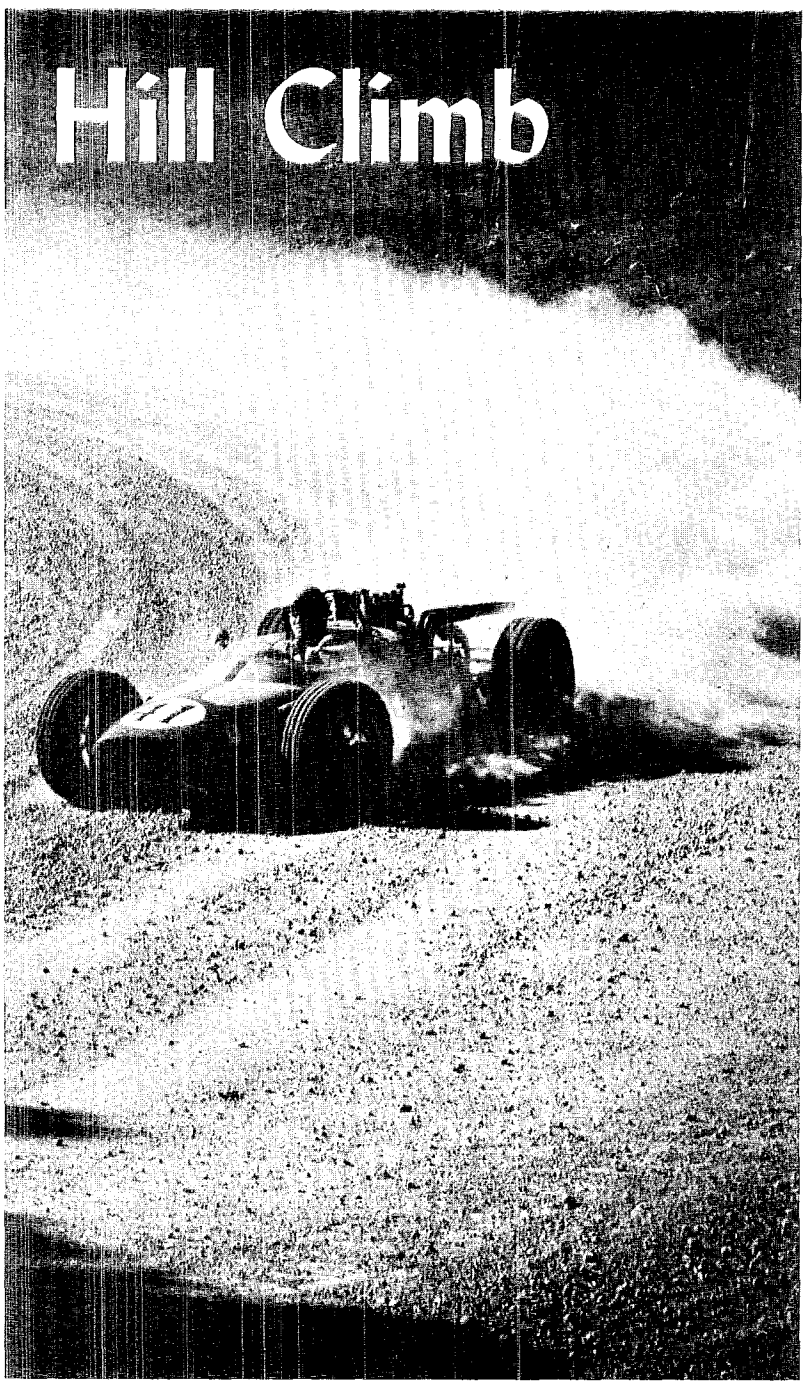

Sideslipping around a curve on the way to the finish line is Gene Willbanks in his Unser/Chevrolet.

First Annual . . .

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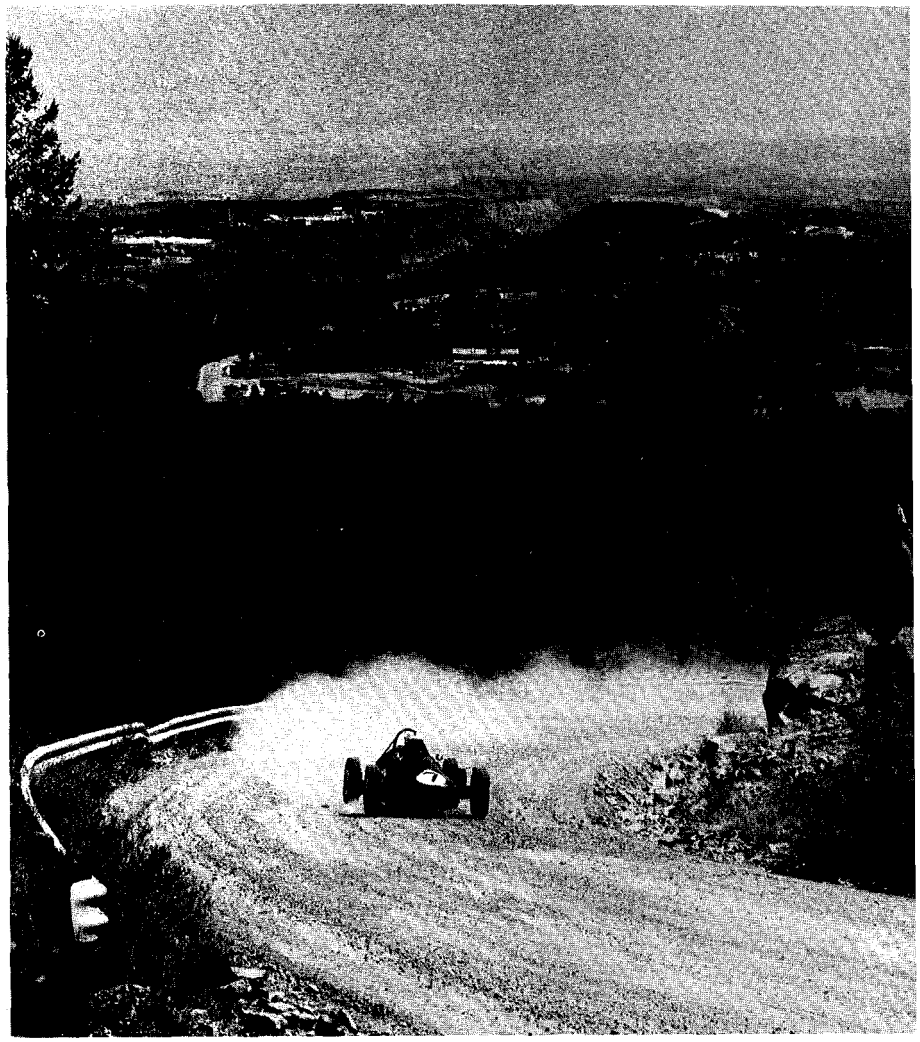
class with a time of 2:54.4 in his Mini-Cooper S. Joe Nasise, an employe of Group CMB-3 at LASL finished in 3:4.9 in his Sprite.

The Formula Vees, a class in which Volkswagen engines are incorporated in custom-built bodies, were paced by Laboratory employe Bob Wenzel, P-4, whose Autodynamics car clocked 2:20.2. Four-tenths of a second behind him, in a vehicle of the same make, was Dave Nokes of Albuquerque with 2:20.6. Autodynamics cars were also entered by Bill Kampfe and Tom Hubbard, both of Albuquerque. Kampfe completed the climb in a time of 2:24.3 for third place and Hubbard finished in 2:28.2. Albuquerque companion John Shane finished in 2:29.0 with his Formcar.

A Los Alamos school teacher, John McHale, finished first in the Dune Buggy category. The Dodge-powered vehicle was built by some of his students in a shops class. Too young by racing standards to compete, however, the students entrusted McHale with their car, who finished in 2:30.9. He was followed by Tom Angle of Santa Fe whose time in a Manx/Corvair was 2:40.8.

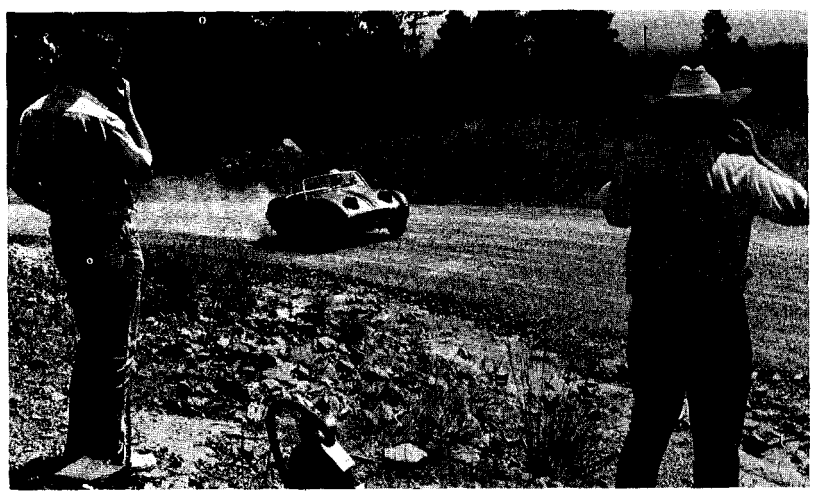
From beginning to end the winding course, which services a picnic area in the summer and a ski area in the winter, rises 800 feet to an altitude of approximately 8,600.

Event chairman Willbanks reported that several hundred spectators attended the race. Many other persons helped administratively in conducting the hill climb. The chairman noted that county officials provided road graders and operators to put the road and parking areas in suitable condition; Los Alamos police were in charge of traffic control to and from the area; the Civil Air Patrol provided a bus to take spectators to and from the viewing areas; emergency equipment was provided by the Fire Department Auxiliary and Civil Defense; and communications were made possible by Mountain States Telephone. The Los Alamos Lions and Jaycees Clubs furnished manpower wherever it was needed.

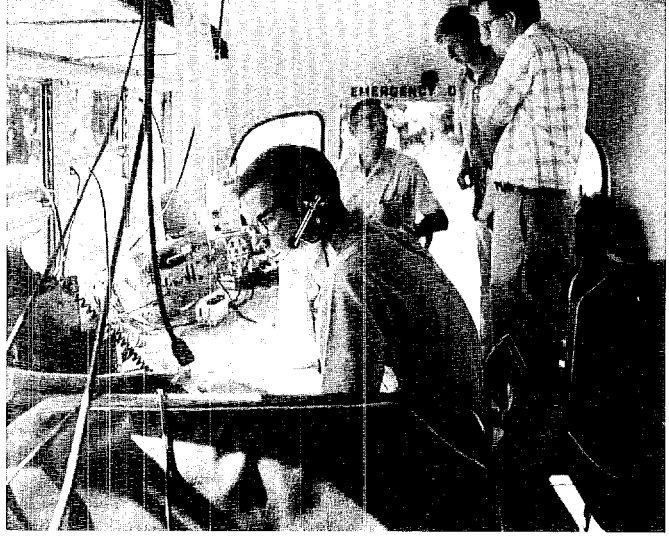


John Shane of Albuquerque brings his Formula Vee entry into the straightaway after rounding one of 15 curves on the Camp May Road. In the background is Los Alamos, the Los Alamos Scientific Laboratory and the Sangre de Cristo Mountains.

Cars were visible to volunteer officials at all times during a run from nine points on the course. At one of the points John Folena, an exchange student from Italy, and Bill Hart, Albuquerque, observe a Sprite driven by Joe Nasise of Los Alamos.

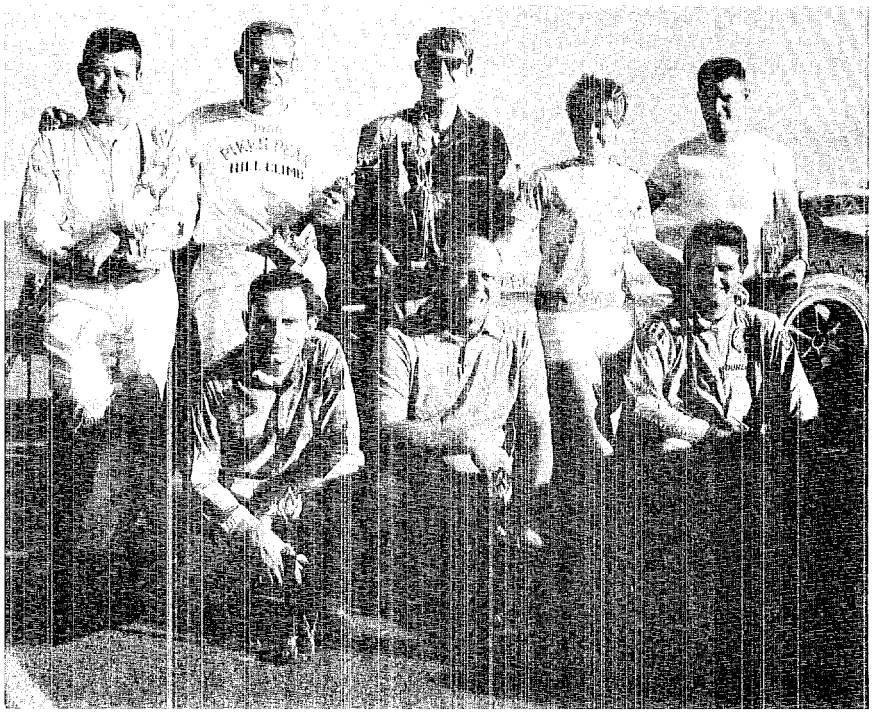


Too excited to notice the cameraman are Leonard Valdez, 10, and his sister Loretta, 8, children of Mr. and Mrs. Fernando Valdez of Albuquerque. They were visiting friends of Eugene Apodaca, 6, son of Mr. and Mrs. Leroy Apodaca, WSD.

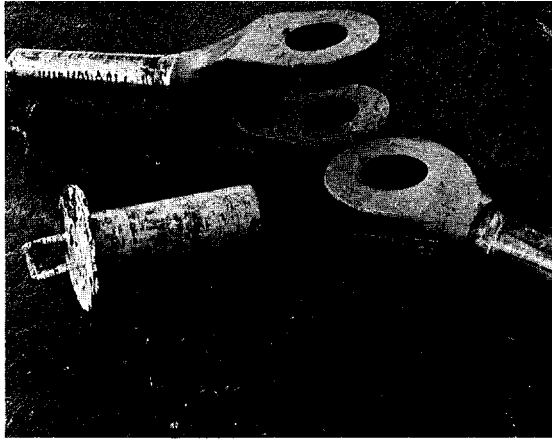


Electrical timing equipment and communications were set up in a bus at the finish line. From left to right are Gerry Strickfaden, Bob Cowan, CMB-6, John Meadows and Brooks Shera, P-2, all of Los Alamos.

Via Encantada winners pose with Trophy Queen Marilyn Archer of Albuquerque. Kneeling are Morrison, Randle and Wenzel. Standing are Alexander, Willbanks, McHale, Miss Archer and Nasise.



John McHale, a Los Alamos school teacher, drove this student-built Dune Buggy to first place in its class.



Cable Assemblies for Downhole Hardware

An interesting sidelight to the Los Alamos Scientific Laboratory's underground weapons testing program is the preparation of cable assemblies used to lower the downhole hardware.

It is an exacting trade that, like other preparatory measures, is often obscured by the fascinating nature of the tests.

Nonetheless, it is a necessary part of the program because it would be impractical, if not impossible, to use a continuous cable. A test hole can be a few hundred or a few thousand feet deep, and even if cable was manufactured in these lengths, the problems in handling and transporting it would be astronomical.

For these reasons J-division officials have settled on a uniform length of 80 feet per cable. Each length is fitted at one end with a large, open socket and at the other end with a closed one, making up the assembly or section. By mating the open end of one assembly with the closed end of another, they can be joined, and by repetition, several sections can be joined to attain the desired length.

Fitting the sockets is the job of Zia Company's ironworker section. One of two methods used is known as "pouring" because, after the end of a cable is inserted into the sleeve of a socket and its wires are separated and cleansed of lubricants and other impurities, hot liquid zinc is poured into the sleeve. When the zinc cools and hardens, it forms a plug that holds the cable to the socket.

However, this method is generally limited to occasions when

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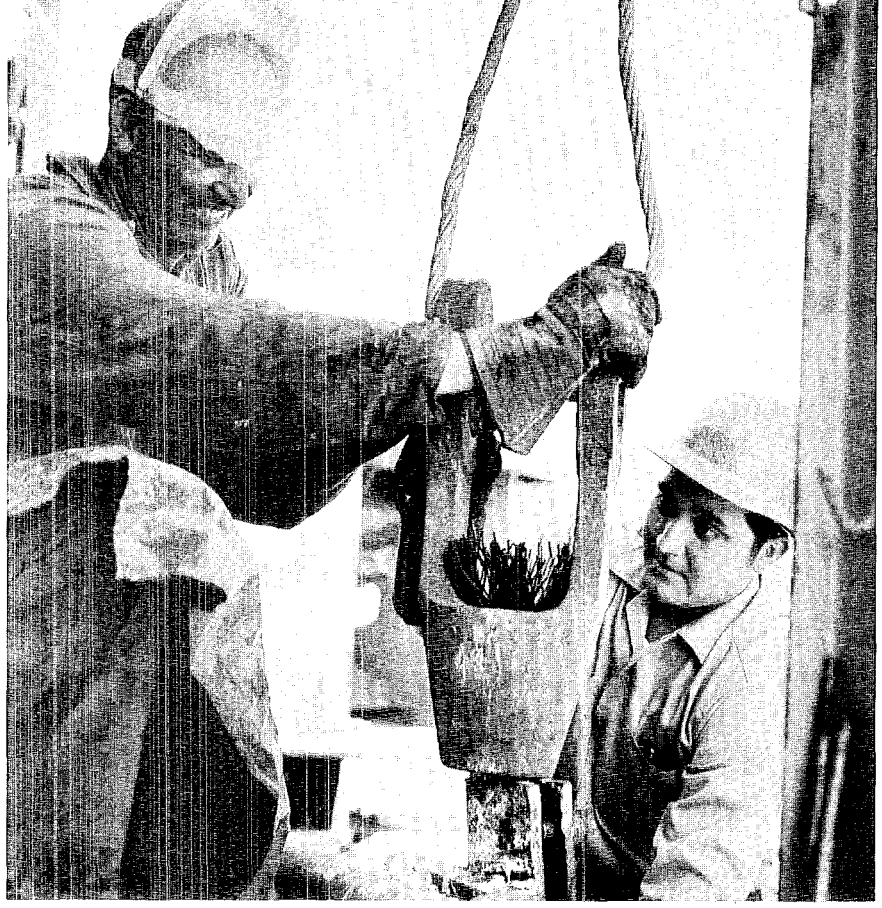
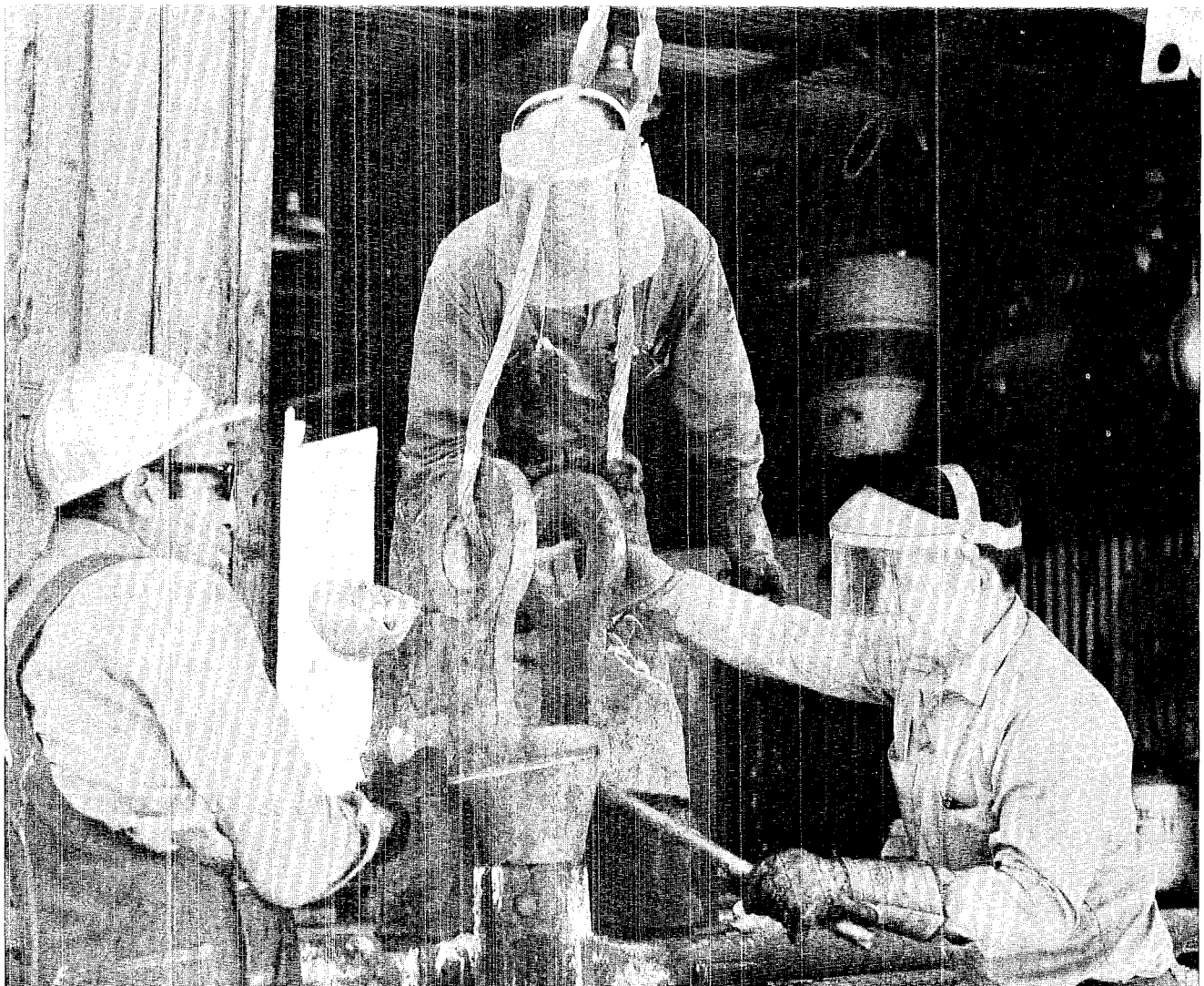
(Left): Each length of cable used to lower hardware downhole is fitted at one end with an open socket and at the other end with a closed one. (Lower Left): Separating and flaring the wires of a cable is Elfego Lovato. The flared end is then washed in a solvent, hot soapy water, and dipped in muriatic acid and hot soda water. (Right): After being dipped in ammonium chloride, a bonding agent, the flared end of the cable is pulled into the sleeve of the socket by John Lopez, left, and Lovato. (Bottom): Lopez, center, prepares to pour hot liquid zinc into the sleeve of a socket which will form a plug and hold the cable securely. Art Ortiz and Lovato pound on the sleeve with iron rods during pouring to prevent air pockets from being formed in the zinc.





Cable . . .

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the diameter of the cable required exceeds two and one-fourth inches. The reason is that another method, known as "swaging" can fit sockets on cable of this size and smaller, faster and more economically.

Swaging is a process in which a socket is fitted onto a cable by tremendous pressure. After being hydraulically rammed onto the cable, the socket is placed in a die under the huge 5,000-ton hydraulic press at Technical Area 3. Under a force of 4,200 tons, its sleeve is pressed into the cable. If the sleeve was cut in half, the cross section would appear almost like one contiguous piece of metal with the only variation being small dots in the center which are the ends of the cable wires.

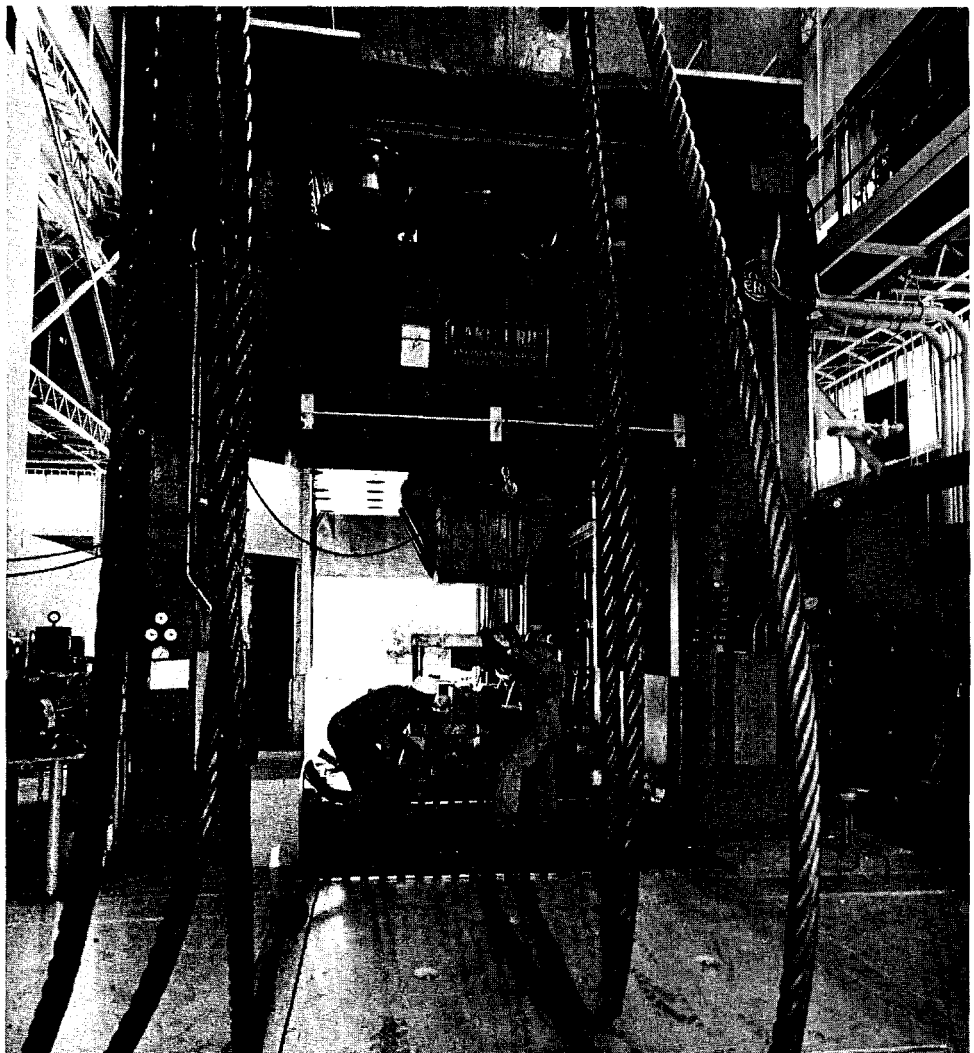
Because of the weight of the down-hole hardware and that which accumulates as section after section of cable is lowered down a test hole, the sockets must have holding power that is comparable to the tensile strength of the cable.

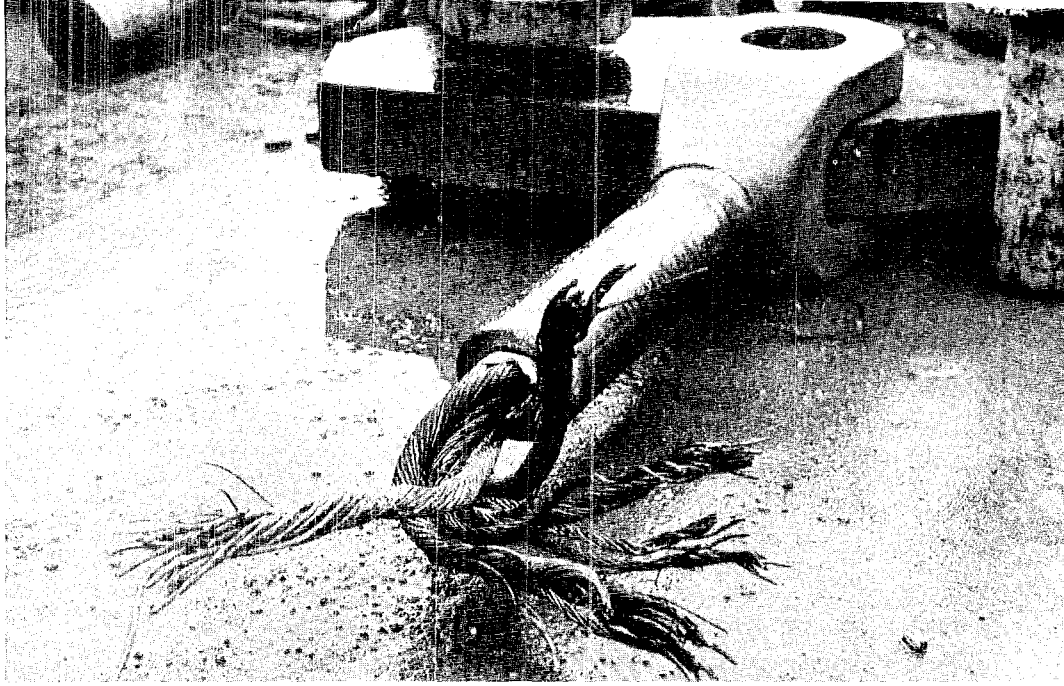
To assure that the sockets have this capability and that the strength of the cable has not been underestimated, the ironworkers test each assembly after pouring or swaging on a special device commonly called a "cable tester."" They are tested in pairs, secured at one end to a stationary block formed by two 36-inch I-beams which are implanted vertically 29 feet in the ground and anchored with cement. At the other end they are attached to hydraulically-operated rams which have combined pulling power up to 750 tons.

Through destruction tests it has been found that the holding power of a socket is generally greater than the strength of the cable, or in other words the cable will break before the socket loosens its hold.

After being successfully tested, the cable assemblies can be coiled, crated and shipped to the test site.

During a year's time the Zia ironworkers fit more than 1,000 sockets.

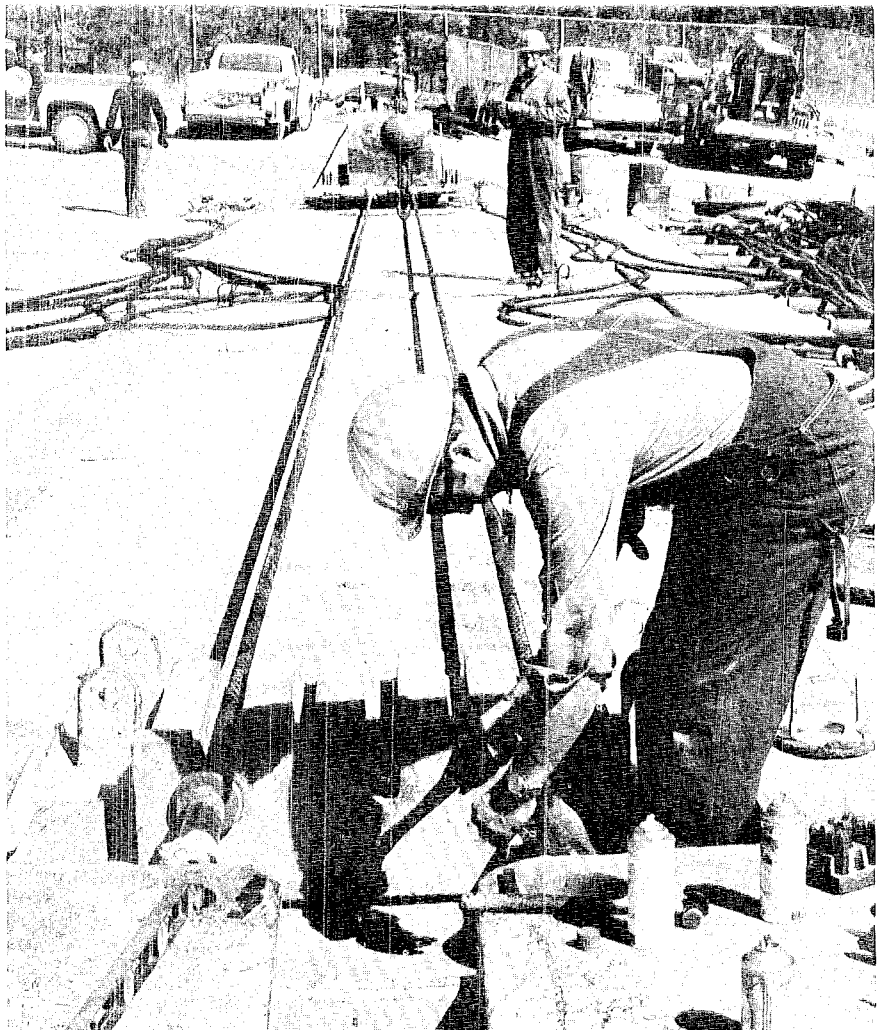


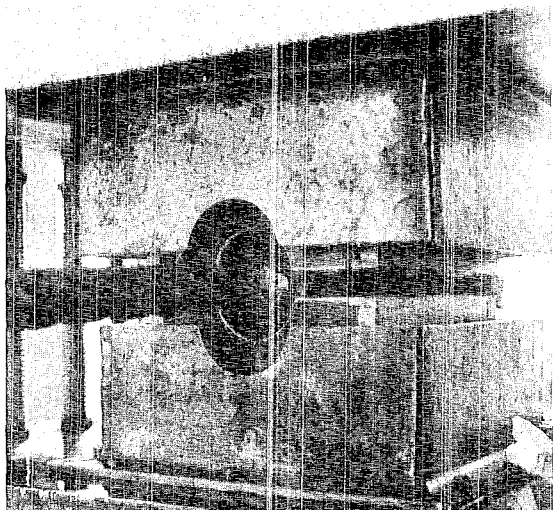


The holding power of the sockets is generally greater than the strength of the cable.

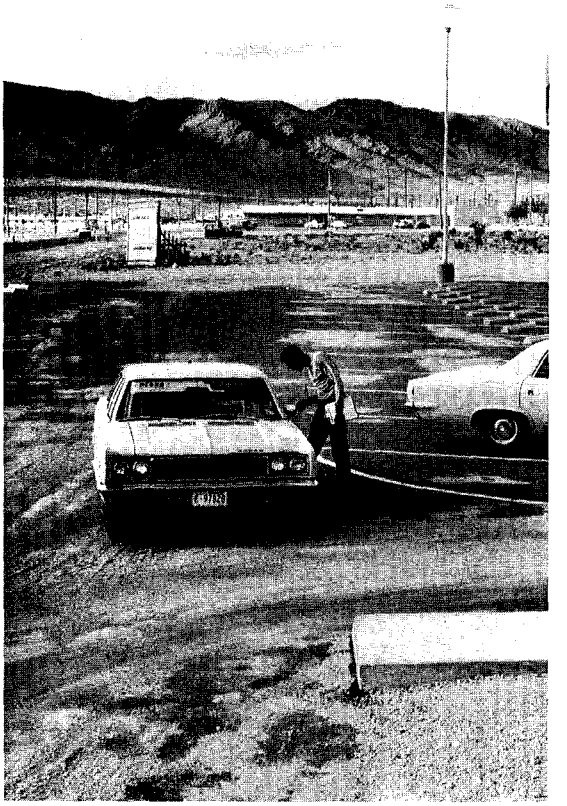
A pair of cable assemblies is tested to assure that the sockets have holding power comparable to the tensile strength of the cables. In the foreground Art Ortiz secures one end of the assemblies to hydraulic rams. John Lopez has secured the other ends to a stationary block formed by two 36-inch I-beams which are implanted vertically 29 feet in the ground and anchored with cement.

(Top): Before swaging, the cable end and socket sleeve are aligned and secured on a table. A hydraulic ram, operated by Roy McKay, rear, then rams the socket onto the cable. Lopez, Ben Lujan and Lovato keep the combination aligned until the cable is positioned properly in the sleeve. (Left): Lopez and Lovato prepare to swage at Technical Area 3 where the huge 5,000-ton hydraulic press is housed. (Bottom): In a die under the press, a socket is swaged onto a cable.





A Look of Permanency



In April of this year the Los Alamos Scientific Laboratory's "camp office" at Mercury, Nevada, took on a look of permanency that had not previously been apparent.

That month Group J-3 moved its office personnel at Mercury into a new building. The structure is easily identified by a sign on which the Laboratory's acronym "LASL" is painted in large letters.

Just outside the door of the yellow stucco building is a large hard-surface parking area equipped with modern lighting fixtures.

The new facility is in stark contrast to the trailers near the theatre which had served as the Mercury office since 1962 when its parent unit, J-3, was relocated to Nevada to provide operational, administrative and personnel support for Laboratory testing programs at NTS and NRDS.

The site on which the facility is located, adjacent to the highway just inside Mercury's main gate, is a more logical selection since the office is usually one of the first stops for Laboratory personnel after arriving at NTS.

The traveler from Los Alamos is no different than the representative of any large corporation on a business trip. He arrives at his destination wearing a wrinkled suit, carrying a suitcase and probably a briefcase. His first concerns are arranging for housing accommodations where he can unpack and change into his work clothes, and transportation so that he can get to and from his assigned work area.

Housing and transportation are the primary functions of the Mercury office. Its staff will assign the visitor a room in one of several dormitories; if he needs transportation, he can be assigned one of nearly 175 government vehicles.

Another of its services is making and reconfirming more than 1,000 reservations each month. Included in this category are motel and hotel reservations in Las Vegas or other cities if employes have stops to make other than at NTS before returning to Los Alamos. The personnel also reconfirm plane reservations or make new ones if the visitor has a change in schedule.

The office is a kind of chamber of commerce too. Its staff will give directions on how to get to where, other information about the town

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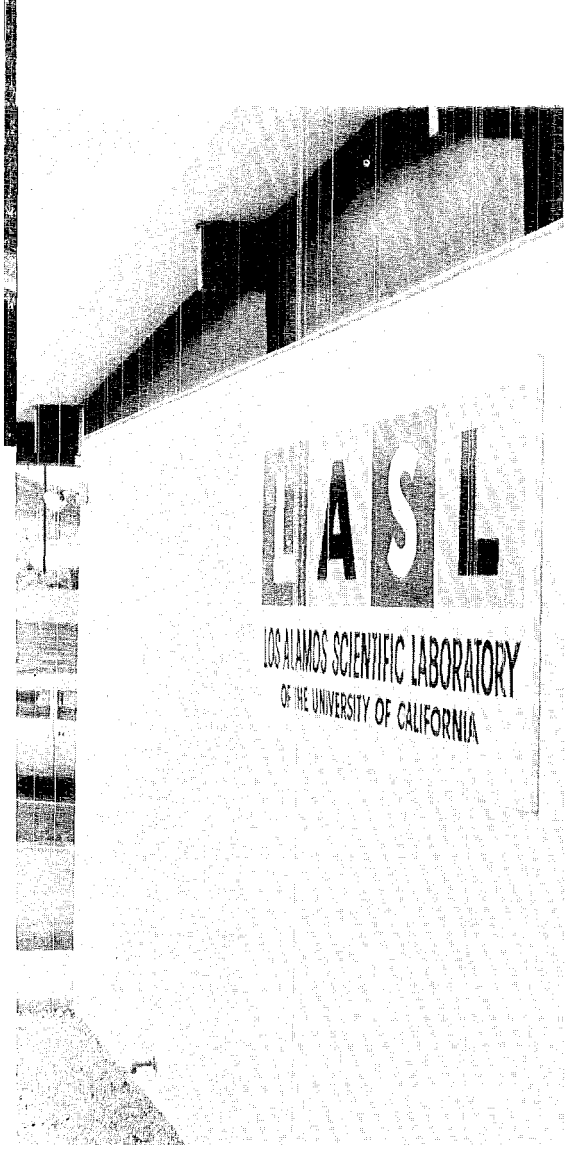
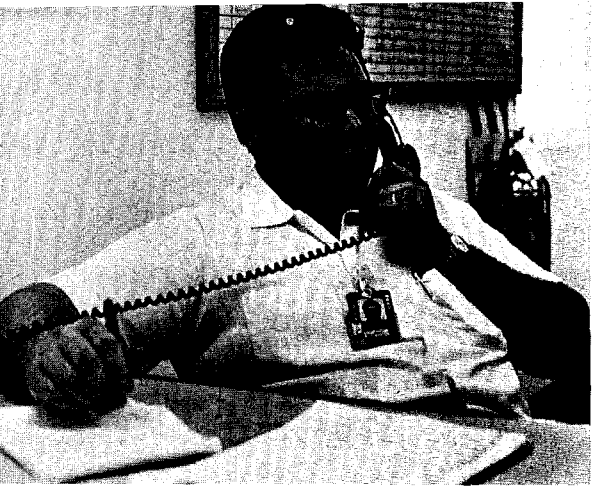


The Los Alamos Scientific Laboratory's new office building at Mercury, Nev. is located adjacent to the highway just inside the camp's main gate.

Just outside the door of the new camp office is a large parking area equipped with modern lighting fixtures.



Joe Gomez, a REECo employe, is chief clerk at LASL's camp office at Mercury.

John Winks is in charge of camp office operations and also at McCarran Airport in Las Vegas.

A Look . . .

continued from page 14

and the test sites; and even react favorably to requests like: "Do you have an extra cigarette?"; or "Can I mooch a cup of coffee?"

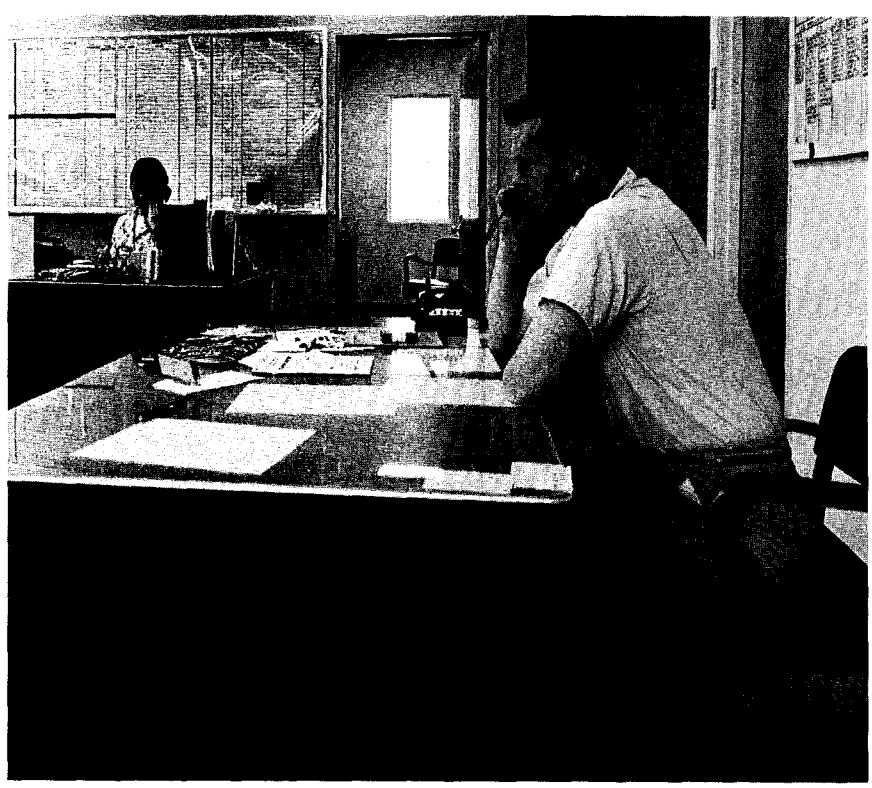
It also provides many other miscellaneous services such as monitoring a communications net; offering temporary office space; providing transportation to and from the Desert Rock Airstrip for arriving and homeward bound LASL employes, or to other areas for personnel on site.

John Winks, who heads the camp office operation, is the only Laboratory employe on the six-member staff. The other five are employes of Reynolds Electrical & Engineering Co., Inc. (REECo) who are on loan to LASL. Under contract with the Atomic Energy Commission, REECo provides support personnel of many job descriptions at the Nevada Test Site.

Winks is assisted by Larry Stine. Kathy Faiss is the reservationist; Joe Gomez, chief clerk; Paul Boucher, senior clerk in transportation; and John Moore, dispatcher.

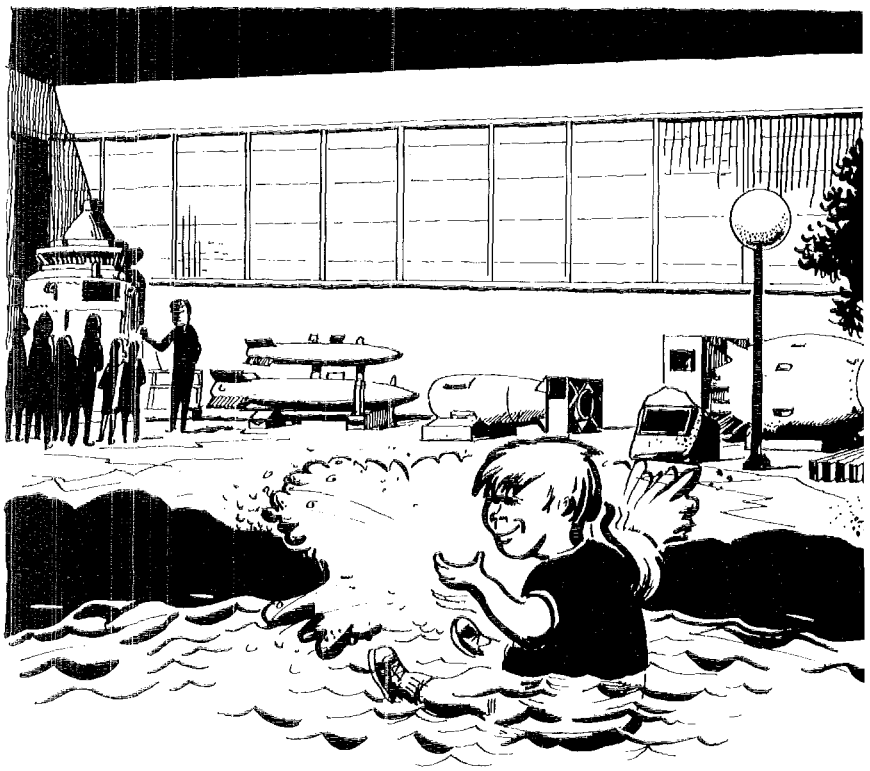
Winks also heads the J-3 office at McCarran Airport in Las Vegas, which is closely associated with the office at Mercury. The McCarran personnel, who are Beverlee Cannon, a LASL employe, and Glenn Page and Tom Johnson, REECo employes, greet LASL travelers who deplane there and provide them with transportation to NTS.

Assistant Manager of the camp office is Larry Stine. Kathy Faiss is the reservationist. Both are REECo employes on loan to LASL.



LASL's science museum, now observing its fifth anniversary, is enjoying visitations from an ever increasing number of people of all ages and walks of life, evidence enough to prove that among its contents there is

Something of Interest for Everyone



By Kent Bulloch

It was a usual summer day at the LASL science museum. The exhibit areas were nearly packed with tourists and assorted guests. Two guided tours were in progress in the main exhibit hall, and another group had just entered the sun-lit courtyard to view the Kiwi reactor and the display of ballistic cases.

But as they listened intently to the guide's description of this world famous laboratory, one of the guests, a chunky young lad of about three, slipped quietly away from his parents.

He had found something of far greater interest to his tender years than the technicalities of atomic energy. Without hesitation, he stepped into the cool, sparkling waters of the fountain which decorates a corner of the patio.

He was finally discovered, of course, sitting in the middle of the shallow pool and appearing very pleased with the refreshing dip. His parents took it all in stride and even finished the tour with the dripping wet youngster firmly in hand.

According to Museum Manager Bob Brashear, the youngster's dip shows the museum indeed has something to offer all its visitors—even though it's not always planned that way.

August marked the fifth anniversary of the museum, and such humorous occurrences are only one of many facets in the business of meeting the public and introducing it to LASL.

Throughout its five-year span, the museum has demonstrated a skyrocketing popularity. The museum has no advertising program, yet the segment of the public visiting each year has grown by leaps and bounds. Since its inception, well over 200,000 persons have visited the museum to learn about the Laboratory and Los Alamos. This summer marked not only the fifth anniversary of the museum, but also an all-time monthly attendance record in August of 13,410 visitors. The largest segment of yearly visitors to the Laboratory is, of course, during the summer months. This summer, 33,268 persons visited the museum—also a record. Projected figures indicate about 65,000 persons will have visited the LASL museum by the end of the year. The yearly total through August was 51,643. Registered visitors to the museum represent every state in the nation, and nearly every country in the world. LASL can indeed claim to be one of the crossroads of the world—and one of the highest and most remote as well.

The museum itself has evolved in an almost

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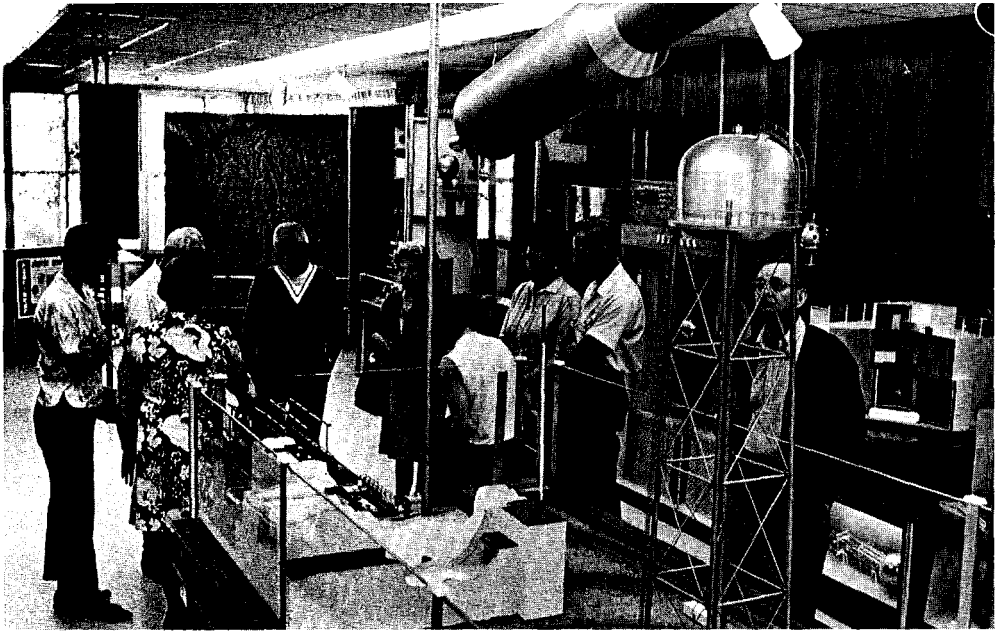


A typical group of visitors to the Los Alamos Scientific Laboratory's science museum is taken on a guided tour. Since its inception five years ago more than 200,000 people have made visitations. This year alone, more than 65,000 persons are expected to tour the facility.

Something of Interest . . .

continued from preceding page

parallel pattern to its popularity. Originally it consisted of only a small and somewhat shabby lecture room in the now-razed AP building (one of the original barracks-type structures built by the Army).

Community Relations Director Robert Y. Porton had learned early in the summer of 1963 that the classified museum in the Laboratory's Administration building was going to be remodeled, and that many of the exhibits might be destroyed or discarded to a warehouse. Working with Robert Krohn of D-6, who managed the classified museum, they arranged to have the unwanted displays declassified and moved to the lecture room.

At that time, the community relations group used the lecture room as a kind of hospitality room, where visitors to Los Alamos could visit and hear a brief talk on the Laboratory and Los Alamos. Displays in the room numbered only a display panel and a model of the Kiwi, the Project Rover reactor.

Porton and Brashear made room for the new material, which included models of the Omega Site reactors, old photos and documents, Oppenheimer's office chair and General Groves' field safe. Together, these formed the nucleus of the museum which was to grow so rapidly in the following years.

From the beginning the museum's popularity was assured. Shortly after its formation, it was necessary to expand the visiting hours to all seven days of the week. The daily operation has continued into the present, and to staff the museum on weekends, the community relations group has offered part-time employment to Los Alamos school teachers. Six teachers currently share in operating the museum weekends and during the summer.

The popularity of the museum has not been limited to Los Alamos visitors. Families of LASL employes soon discovered they could learn more about the Laboratory by a visit to the museum, and that they also had an ideal showplace for their visiting friends and relatives.

One of the most significant segments of the museum's evolution occurred on the second anniversary, Labor Day, 1965, when the entire museum was moved lock, stock, and reactor models, into its present quarters. Established in these quarters, the museum has utilized an attractive brick building as a firm foundation, in which to develop and grow. Today the museum is being utilized nearly to its capacity. Exhibits, through the collaboration of Brashear and Merle Carter of the Shops Department, have been added to be representative of today's research activities within the Laboratory. It won't be too unlikely if the museum outgrows its present quarters altogether, if the public interest in the museum continues to grow. In any event, the next five years of museum operation is expected to continue the success story of the first five years.

short subjects

Frederick R. Tesche, MP associate division leader and MP-5 group leader, who started a one year leave of absence in June, has been selected as special assistant to the AEC's assistant general manager for Military Application, Major General Edward B. Giller, USAF.

Tesche will assist in the direction of programs of research, development, testing, production, storage and readiness assurance of nuclear weapons, and perform special technical and technical-administrative assignments involving all aspects of the weapons program.

Robert D. Fowler, CMF division leader, began a professional renewal leave of absence Sept. 16.

He is spending the leave at Stanford University, Calif., working with Professor Theodore Geballe of the Department of Physics in the field of low temperature physics.

Until his return Jan. 15, **Eugene S. Robinson,** CMF-4 group leader, will be acting division head.

Alternate Group Leader **Joseph A. Leary** and **Lawrence J. Mullins,** both CMB-11, are the coauthors of an article on plutonium in the new edition of the "Encyclopedia of Chemical Technology."

The article is on pages 879-896 of Volume 15.

Paul I. Nakayama, T-3, will complete course work toward the Ph.D. degree at Purdue University, Lafayette, Ind.

Nakayama, participating in the Laboratory's Advanced Study Program, began his studies at the University Sept. 1 and is expected to return to Los Alamos in June.

He will prepare his dissertation on "Turbulence" under C. W. Hirt, T-3.

Harold M. Agnew, weapons division leader at the Los Alamos Scientific Laboratory, was the United States' keynote speaker at the fourth annual NATO AGARD (Advisory Group for Aerospace Research and Development) Conference last month.

Agnew spoke on the second day of the two-day conference in Cambridge, England.

Rodney S. Thurston, W-4, has been selected as technical program chairman for the 1969 Cryogenic Engineering Conference at the University of California at Los Angeles June 16-18.

Approximately 100 papers are expected to be presented by delegates from throughout the United States and some foreign countries.

Two prizes of $100 each will be awarded for the best paper in cryogenic engineering research and in application of cryogenic engineering.

Thurston said that the Los Alamos Scientific Laboratory has traditionally been a major contributor at the conference and encouraged a sizable representation of LASL papers at next year's event.

Joseph V. Baca, GMX-3, is combining vacation time and a leave of absence to continue studies toward a degree at the College of Santa Fe.

He is expected to return to his work at the Laboratory in January.

Henry A. Sandmeier, T-DOT, will be a visiting professor at the University of Stuttgart, Germany, while on leave from the Los Alamos Scientific Laboratory. During the winter semester, Oct. 15- Feb. 28, he will teach a three-hour course on transport theory and two parallel seminars on nuclear weapons effects.

Sandmeier and his family left Sept. 4 to vacation in his native Switzerland.

Before going to Stuttgart, Sandmeier was to deliver a one-week lecture series on nuclear weapons effects at the Swedish Institute of National Defense in Stockholm, and spend two weeks consulting with the Euratom-ENEA Computer Code Center in Ispra, Italy. While in Ispra he was to give a lecture series on transport calculations.

Eight More Laboratory Employes Retire

During the month of August, two employes retired from the Laboratory. George Martinez, carpenter, GMX-6, resigned after eight years and plans to reside in Dixon. O. P. Dorman, formerly with W-3 but more recently a bookkeeper with the director's office, left after nine years with the Laboratory. He plans to continue living in Santa Fe.

Six employes retired from LASL during the month of September.

Peter Cattani, J-1, property supervisor, has been with the Laboratory for approximately 15 years. This includes a period of seven years during which he was employed by the AEC, but assigned to J division. Cattani has not, as yet, made definite plans following retirement.

Gerald Hoff, Sr., SD-5, has been employed by the Laboratory for over 23 years having previously worked for Rock Island Arsenal. Mr. and Mrs. Hoff will be moving to a Tano Road acreage outside Santa Fe where they plan to enjoy their brand new, all-electric home.

John G. Williamson, GMX-7, is retiring after almost 19 years with the Laboratory. His wife, Grace, is employed by SP-12. He plans to operate his own machine shop and to continue residing in Los Alamos.

Esther A. Converse, radiochemistry technician, CMB-1, and husband, Richard L. Converse, certifying agent, GMX-3, will be retiring at the end of September. Mr. and Mrs. Converse plan to remain in Los Alamos.

Willard W. Foreman, staff member, H-5, retired September 6, after long-term employment with the Laboratory. He will make his home in Roswell, New Mexico.

new hires

C Division

Pauline Marie Farmer, Los Alamos, C-1
Velma Adele Payne, Los Alamos, C-1
Linda Roybal, Los Alamos, C-1 (Casual)
Paul J. Brown, Holloman AFB, N.M., C-2
Averill Harris Lochabay, Houston, Tex., C-2

CMB Division

Donald Harold Michel, Burlington, N.J., CMB-7
Kenneth Louis Walters, Peoria, Ill., CMB-11

CMF Division

Arthur Michael Boring, Jacksonville Beach, Fla., CMF-5
Rickey Jay Williams, Ft. Worth, Tex., CMF-5 (Post doctoral)

Engineering Department

Freda A. Grote, Los Alamos, Eng-3 (Casual)
Michael H. J. Backsen, Mandan, N.D., Eng-7

GMX Division

Neal Aage Lundgaard, Jr., Ada, Oklahoma, GMX-1 (Rehire)
Johnny R. F. Baca, Albuquerque, GMX-3
Horace Martinez, Espanola, GMX-6
Charles Edward Morris, Ames, Iowa, GMX-6
William Charles Rivard, Melvindale, Mich., GMX-10
Charles A. Slocomb, Denver, Colo., GMX-10

H Division

Charles David Amies, Rochester, N.Y., H-1
Ronald Gary Stafford, Los Alamos, H-5

J Division

Shirley Ann Mikulich, Los Alamos, J-1 (Casual Rehire)
Lynda F. Taylor, Los Alamos, J-1 (Casual Rehire)
Dianna Lynn Fawver, Los Alamos, J-6

K Division

Harlene Anne Niethammer, Los Alamos, K-1 (Part Time)
Kaye Marie Miller, Los Alamos, K-4 (Rehire)

MP Division

Robert Edwin Rajala, Las Vegas, Nev., MP-4
John Joseph Busick, Baltimore, Md., MP-5 (Rehire)
Robert L. Burman, Chicago, Ill., MP-6
Arthur G. Mark, Los Alamos, MP-6 (Research Asst.)

N Division

Roy Lynn Johnston, Jackass Flats, Nev., N-1
Stephen W. France, N-6 (Casual)

P Division

Thomas Jay Brunton, Decatur, Ill., P-2
George Albert Keyworth, II, Gardner, Mass., P-3
Michael Stanley Moore, Idaho Falls, Idaho, P-3
Diana Orrick, Killeen, Tex., P-12

Personnel Department

Guadalupe Georgia Martinez, Espanola, Per-DO
Bobbie Jean Harlow, Los Alamos, Per-1 (Casual)
Josephine Parker, Colorado Springs, Colo., Per-1
Cornelia J. Clinton, Los Alamos, Per-7

Public Relations

Mary Dunthorne Gilmore, Los Alamos, Pub-2 (Part Time)

Shop Department

James Russell Lippiatt, Salem, Ohio, SD-1

T Division

Donald Andrew Neeper, Chicago, Ill., T-2
Harold Hubert Rogers, Jr., San Angelo, Tex., T-2

W Division

Robert Paul Goodwin, Harvey, Ill., W-7
Lewis Love Bowen, Kirtland AFB, N.M., W-9
Robert Houston Gattis, Clarendon, Tex., W-9

United Fund Drive for $60,000 to be Launched

The annual Los Alamos United Fund Drive will be launched tomorrow (Oct. 2) in an effort to raise $60,000 to enhance the activities of 13 local service agencies.

In last year's drive for $55,000, county participation topped the goal by nearly $2,000. Phil Reinig, this year's general campaign chairman and head of the engineering department at the Los Alamos Scientific Laboratory, said that although the 1968 goal is $5,000 higher than last year, the difference is primarily a reflection of inflation and increased needs of United Fund organizations.

"The services rendered by the agency members of the United Fund", he said, "are those needed in any community. Los Alamos, so atypical a town in so many ways, is completely typical in this respect. The United Fund agencies meet real community needs and are deserving of our full community support."

Most of the total funds collected in the month-long campaign are ear-marked for activities in Los Alamos and the immediate surrounding area, according to Ted Shull, president of the Board of Trustees and a member of LASL's Group J-11. Some of the money goes off the hill such as in the case of disaster relief. Agency requests this year range from $100 to $9,800.

Of the total figure, the American Red Cross is to receive $6,300; Los Alamos Association for Retarded Children, $4,600; Salvation Army, $5,500; United Service Organization, $770; Babe Ruth League, $1,800; Boy Scouts, $9,100; Cancer Clinic, $7,000; Los Alamos Family Council, $6,500; Girl Scouts, $9,800; Los Alamos Heart Association, $3,600; Little League, $800; Los Alamos Association for the Physically Handicapped, $500; Travelers Aid Society, $100. The Lassie League, also participating in the campaign, has not requested any funds again this year. To help member agencies meet unexpected expenses, such as those which arise from disasters, and to help agencies that unexpectedly lose other sources of income, such as state or federal support, $3,630 has been allocated for an emergency reserve fund.

All contributions will be collected at places of employment with the exception of the retired segment of the population which will be solicited by Walt Scherling. Gene Jones will conduct the campaign in the Los Alamos business district; Ed Voorhees, Los Alamos Scientific Laboratory; George Brenner, County; Gene Ebinger, schools; Tom Cook, Zia Company; Lee Warren, Atomic Energy Commission and Department of Housing and Urban Affairs; and Dr. Paul Lee, Los Alamos Medical Center.

Contributions may be made in cash or by check, payable to the United Fund. Both local banks have agreed to accept monthly bank deductions again this year. Pledge cards will provide space for bank deductions.

Reinig noted that the Los Alamos United Fund has no paid employes. "The drive is conducted by volunteer workers," he said. "The dollars given do not begin to match the value received from the volunteer efforts of the Los Alamos people who make up the service agencies and the United Fund organization.

"Before the United Fund was established," the chairman said, "each of its member agencies conducted its own campaign for funds. If you were still contacted by each of these agencies, how much would you give to each one? This is the question you should ask yourself when you are contacted by a volunteer worker for the United Fund, and then contribute on that basis."

The Technical Side

Presentation at Gordon Research Conference on High Temperature Chemistry, Crystal Mountain, Wash., July 29-Aug. 2:

"LEED Investigations of Oxides" by W. P. Ellis, CMB-8 (invited talk)

Presentation at Lecture to be given at Aurora and Airglow Advanced Study Institute at the Agricultural College of Norway, July 29-Aug. 9:

"Observations in the Magnetotail and their Interpretation" by E. W. Hones, Jr., P-4 (invited talk)

Third International Atomic Energy Agency Conference on Plasma Physics and Controlled Fusion Research, Novosibirsk, USSR, Aug. 1-7:

"Linear Theta-Pinch Experiments Related to the Stability of a Toroidal Theta-Pinch of Large Aspect Ratio" by E. M. Little, A. A. Newton, W. E. Quinn, F. L. Ribe, G. A. Sawyer, and K. S. Thomas, all P-15

"On the Mechanism of Neutron Production from the Dense Plasma Focus" by P. J. Bottoms, J. W. Mather, and A. H. Williams, all P-7

"Monte Carlo Studies of Inhibition of End Loss from Theta-Pinch Systems by Nonadiabatic 'Rough' Magnetic Walls" by J. L. Tuck, P-DO

Presentation at International Federation for Information Processing Meeting, Edinburgh, Scotland, Aug. 5-10:

"A Method for Automatic Rezoning in the Numerical Calculation of Two-Dimensional Lagrangian Hydrodynamics" by P. L. Browne, T-5

Presentation at American Crystallography Association Meeting, Buffalo, N.Y., Aug. 12-16:

"A Program for Stereo Plotting of Three Dimensional Electron Density" by D. T. Cromer, CMF-5

Presentation at 2nd International Tutorial on Quantitative Cyto-chemistry, Chicago, Ill., Aug. 14-17:

"Electronic Cell Sorting" by M. J. Fulwyler, H-4 (invited talk)

Briefing of Director of Exploratory Systems Studies and Information Systems Department, Sandia Base, Albuquerque, Aug. 14:

"Acoustic Locator Field Tests in Vietnam" by R. W. Freyman, P-1

Briefing of Commanding General of United States Army Missile and Artillery Command, Ft. Sill, Okla., Aug. 15:

"Acoustic Locator Field Tests in Vietnam" by R. W. Freyman, P-1

Presentation at third International Congress of Histochemistry and Cytochemistry, New York, N.Y., Aug. 18-22:

"A New Microfluorometer for Rapid Measurement of Cells Stained with Fluorochrones" by M. A. Van Dilla, P. F. Mullaney, both H-4, and J. R. Coulter, SD-5

"Light Scattering by Biological Cells and Its Relation to Cell Size" by P. F. Mullaney, P. N. Dean, and M. A. Van Dilla, all H-4

Presentation at Meeting of the American Society for Pharmacology and Experimental Therapeutics, Minneapolis, Minn., Aug. 18-22:

"Interactions of Protein and RNA Synthesis Inhibitors in Cultured Cells" by D. F. Peterson, R. A. Tobey, and E. C. Anderson, all H-4

Presentation at 2nd International Conference on Thermal Analysis, Holy Cross College, Worchester, Mass., Aug. 18-23:

"A Contribution to the Kinetics and Mechanism of the Thermal Decomposition of Alkali Metal Picrates" by M. Stammler, GMX-2

Presentation at Cryogenic Engineering Conference, Case Western Reserve University, Cleveland, Ohio, Aug. 19-21:

"The Interaction of Control Valves with Oscillations Generated in a Large Water to Hydrogen Heat Exchanger" by J. B. Henshall, J-17, NRDS, J. J. Nutter, J-18, F. J. Edeskuty, CMF-9, and R. S. Thurston, W-4

"Development and Field Testing of a Nuclear Densimeter" by J. R. Bartlit and D. H. Lester, both CMF-9

"Simultaneous Measurement of Young's and the Shear Modulus at Low Temperatures" by P. E. Armstrong and D. T. Eash, both CMF-13 (invited paper)

Informal Talk "Heat Transfer" by R. J. Hanold, J-15

Presentation at 13th Annual Technical Symposium, Society of Photographic Instrumentation Engineers, Washington, D.C., Aug. 19-23:

"Field Photography of Projectiles in Flight" by P. M. Giles, W-3

Presentation at International Symposium on High-Speed Computing in Fluid Dynamics, International Union of Theoretical and Applied Mathematics, Monterey, Calif., Aug. 19-24:

"An Evaluation of Fluid Dynamics Approximations Using a Numerical Method" by B. J. Daly, T-3

"Computer Studies of Time-Dependent Turbulent Flows" by C. W. Hirt, T-3

"A Three Dimensional Study of Flow Between Concentric Rotating Cylinders" by K. A. Meyer, T-5

Twelfth International Congress of Genetics, Tokyo, Japan, Aug. 19-28:

"Reproductive and Physiological Fitness in Progeny Mice Through 40 Generations of X-Irradiated Male Progenitors" by J. F. Spalding, Mary R. Brooks, both H-4, and G. L. Tietjen, T-13

Presentation at Seminar, Physics Department, Battelle Institute, Northwest Laboratory, Richland, Wash., Aug. 20:

"A survey of Plasma Problems in Astrophysics" by D. S. De Young, J-10

Presentation at American Astronomical Society Meeting, Victoria, B.C., Canada, Aug. 20-23:

"Rotational Instability in Extragalactic Gas Jets" by D. S. De Young, J-10

Presentation at Seminar on Near Critical Heat Transfer and Fluid Mechanics, Cryogenic Engineering Conference, Cleveland, Ohio, Aug. 21:

"Temperature and Velocity Profiles in Near Critical Hydrogen" by M. T. Wilson, MP-6

Presentation at 11th International Conference on Low Temperature Physics, St. Andrews, Scotland, Aug. 21-28:

"Miscellaneous Observations on Film Flow" by L. J. Campbell, E. F. Hammel, D. M. Jones, and W. E. Keller, CMF-9

"Dielectric Polarizabilities of ^3He" by E. C. Kerr and R. H. Sherman, both CMF-9

"The Thermal Conductivity of ^4He I Near the Lambda-Line and of ^3He Near the Liquid-Vapor Critical Point" by J. R. Kerrisk, N-1, and W. E. Keller, CMF-9

"Determination of the Electric Quadrupole-Quadrupole Coupling Parameter in Solid H_2 and D_2" by D. Ramm, J. F. Jarvis, and H. Meyer, Duke University, and R. L. Mills, CMF-9

Presentation at Conference of Metallurgists, sponsored by Canadian Institute of Mining and Metallurgy, University of British Columbia, Vancouver, B.C., Canada, Aug. 25-28:

"Strength and Microstructure of Aluminum Compressed in the Cam Plastometer" by J. E. Hockett, CMF-13, and J. H. McQueen, J-DO

Seventh Symposium on Naval Hydrodynamics, Rome, Italy, Aug. 25-30:

"The Numerical Simulation of Viscous Incompressible Fluid Flows" by C. W. Hirt, T-3

Presentation at Meeting of CAP (Council for Advanced Programming), Las Vegas, Nev., Aug. 26:

"Analog Computer Potentiometer Record and Storage Program" by C. P. Milich, N-4

"Test Cell 'C' On-line Computer and Associated Software" by E. P. Elkins, J-17

Presentation at Seminar in the Physics Department at the University of Delaware, Newark, Del., Aug. 26:

"Biophysics Research at Los Alamos" by P. F. Mullaney, H-4 (invited talk)

Presentation at Seminar at Brown University, School of Medicine, Providence, R.I., Aug. 26:

"A New High-Speed Method for the Measurement of Fluorescent Cells" by M. A. Van Dilla, H-4

Presentation at IAEA Symposium on Operating and Developmental Experience in the Treatment of Airborne Radioactive Wastes, New York City, N.Y., Aug. 26-30:

"Testing HEPA Filters for Use in a High Noise Level Environment" by J. D. DeField, H-5

"Efficiency Testing the Air Cleaning System for a High Temperature Reactor" by J. D. Defield and H. J. Ettinger, H-5

Presentation at Seminar at the Lovelace Foundation, Albuquerque, N.M., Aug. 28:

"Tumorigenicity of Small Highly Radioactive Particles" by P. N. Dean, H-4 (invited talk)

Presentation at 6th International Congress of Embryology, Paris, France, Sept. 1-7:

"Turnover of Histone Fractions Related to DNA and RNA Synthesis in vivo" by L. R. Gurley and Julia M. Hardin, both H-4

Presentation at Symposium on New Aspects of the Chemistry of Metal Carbonyls and Derivatives, Venice, Italy, Sept. 2-4:

"Force Constants of Metal Hexacarbonyls from Vibrational Spectra of Isotopic Species" by R. S. McDowell, L. H. Jones, and M. Goldblatt, all CMF-4

Presentation at Seminar on the Application of On-Line Computers to Nuclear Reactors, Sandefjord, Norway, Sept. 2-6:

"Digital Control System for the UHTREX Reactor" by H. B. Demuth, J. Bergstein, K. H. Duerre, and F. P. Schilling, all K-4

Presentation at U.S.-Japan Seminar on Reactor Noise Analysis, Tokyo, Japan, Sept. 3-7:

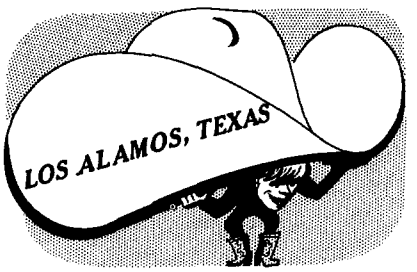
"Neutron Counting Statistics in Basic Critical Assemblies" by J. D. Orndoff, N-2, and G. R. Keepin, N-6

Presentation by Ralph Oberly at Molecular Spectroscopy Symposium, Columbus, Ohio, Sept. 3-7:

"Infrared Bands of $^{12}C^{18}O_2$" by Ralph Oberly and K. N. Rao, Ohio State University, and L. H. Jones and M. Goldblatt, both CMF-4

"Effects of Fermi Resonance in the Bands of $^{15}N_2{}^{18}O$" by A. W. Mantz and K. M. Rao, Ohio State University, and L. H. Jones and R. M. Potter, both CMF-4

20 years ago in los alamos



Culled from the 1948 files of the Santa Fe New Mexican by Robert Porton

Los Alamos Sees a New Day Dawning

A new note of optimism has caught on among gloomy residents of the Atomic City with the hope that Los Alamos may become a part of Texas. The new salutation, "Are you a Texan?" has placed every citizen in the position of announcing his stand and standing up for it. A petition released yesterday to the president, the congress, and the governor of Texas is receiving wholesale circulation and comment. Fireworks broke loose today when Martin Black, KRS announcer, reviewed the petition on a radio program and asked supporters to call him. By evening, the telephone was jammed with calls and 228 citizens had registered their attitudes. Of this number, 176 were for annexation by Texas; 52 were against. Station breaks on the radio the next morning declared "KRS—Los Alamos, Texas." The petition is taken enthusiastically by most in a humorous way. Today, friends and strangers were greeting each other—"Hi-ya, Tex," in accents ranging from a twangy New England town, to the Brooklynese of New York, to the real thing from the Lone Star state.

No Control Over Hill Hooch Store

New Mexico will probably have no jurisdiction over the planned Los Alamos liquor store. Attorney General C. C. McCulloh said that the store will not have to have a state or county license, if it is located on land acquired by condemnation. The attorney general believes—and this is more far-reaching—the store will not be subject to the state's liquor control act, including the fair trade provision. The location in the old post exchange building has already been selected. If the attorney general's rule is correct, the State Liquor Control Division will also have no voice in who will run the store. That will be the exclusive right of the Community Council, Inc., which controls the awarding of the concession.

New Community Center Officially Opens

Eleven Hill concessionaires will occupy new homes this week before their formal opening Monday evening. The business district is probably the only one of its kind in the country, Earle D. Sullivan, director of community affairs, said today. Sullivan pointed out that the shopping area here is similar to a large department store, in that only one of each concession is provided, and that they are grouped together. Parking lots are provided in the perimeter of the center, and the plaza will be planned as a park, with benches, trees, flowers and shrubs.

Peter J. Peterson Dies at Houston

Peter J. Peterson, CMB-14, died in a Houston, Texas, hospital Sept. 15 following a lengthy illness.

Peterson, 42, was a resident of Los Alamos since 1952. He was a native of Frankfort, Michigan, a graduate of the University of Michigan in chemical engineering, and an Army combat veteran of World War II.

Survivors include his wife, Harriett, sons Eric, 13, and Thomas, 10, and a daughter, Anne, 8, all of 101 El Gancho Street.

what's doing

MESA PUBLIC LIBRARY EXHIBITS: October 2 through October 30—oils and acrylics—by Glenn Riggs.

NEWCOMERS CLUB: Meeting October 23, 7:30 p.m., Recreation Hall, tasting party and cake decorating demonstration. For information call Mrs. Beverly Morris, 662-3258.

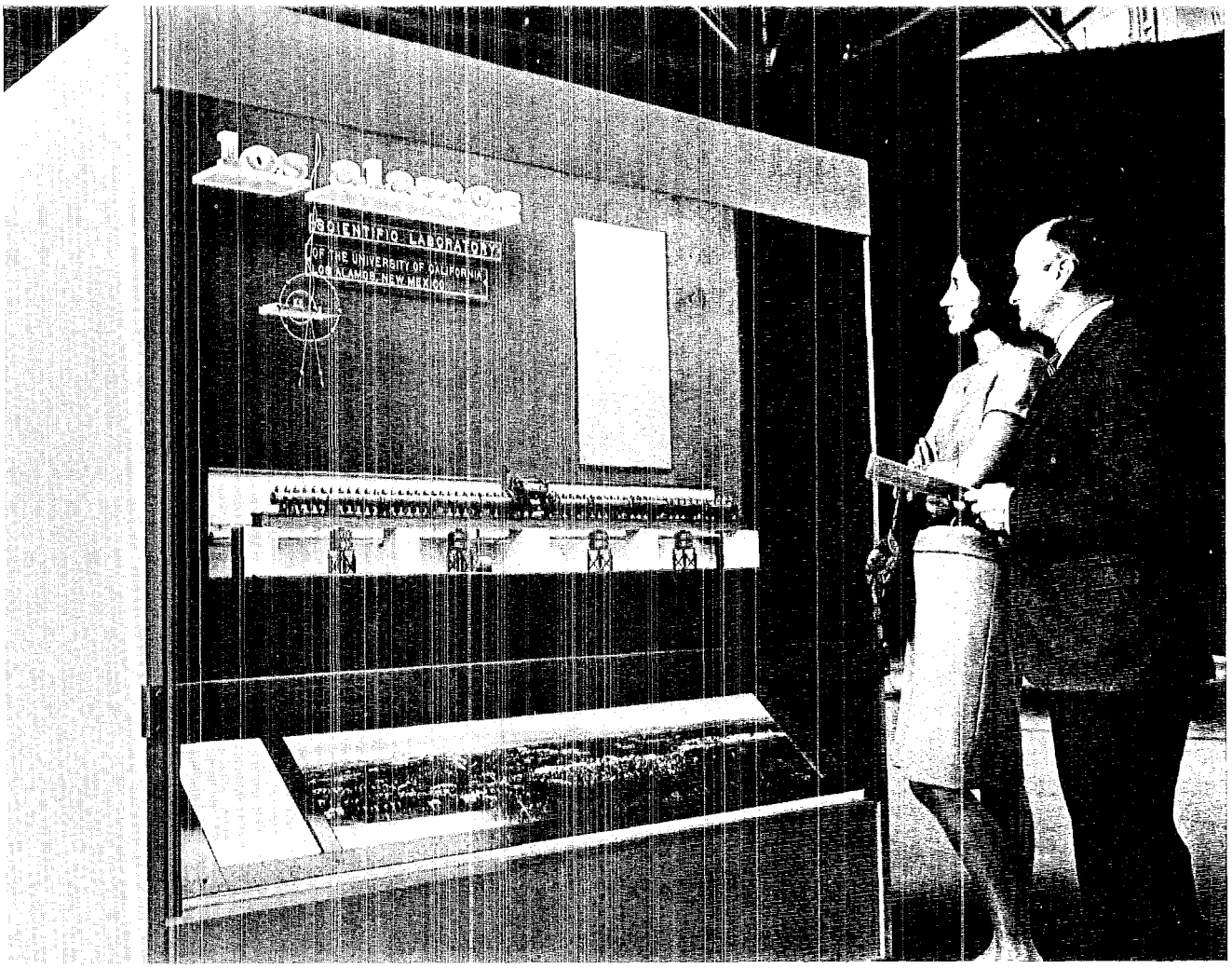
LITTLE THEATER: First production of the season: "The Owl and the Pussycat," by Bill Manhoff, October 4 and 5, 8:30 p.m., Los Alamos Civic Auditorium. Cast includes Micki Dick and Hans Ruppel. Brandy Steger, director; Dr. Duane Drake, assistant to the director. Season tickets ($5) and single admission ($2) available at the box office of the auditorium. Season tickets also available from Audrey Goldblatt, 2-2110.

PUBLIC SWIMMING: High School Pool; Monday through Thursday, 7:30 p.m. to 9:30 p.m. open swimming; Saturday and Sunday, 1 p.m. to 6 p.m., open swimming; Sunday from 7 p.m. to 9 p.m., Adult Swim Club.

LOS ALAMOS CONCERT ASSOCIATION: Fall drive presently under way. Season tickets, $8.50, adults; $4.00, students. Planned concerts: five for Los Alamos, four for Santa Fe, and undetermined number for Las Vegas. For information call Mrs. Henry Filip, 2-2135.

OUTDOOR ASSOCIATION: No charge; open to the public. Contact leader for information about specific hikes.

- October 6—Painted Cave from the south, Don Hoard, leader, 672-3356
- Oct. 12—Wheeler Peak, Herb Vogel, leader, 672-9832
- Oct. 19—Obsidian Ridge, Virginia Windsor, leader, 2-3440
- October 27—Apache Springs to Bandelier Headquarters, Dibbon Hagar, leader, 2-6209



LASL's exhibit in the University of California's Centennial Caravan attracted the attention of Berkeley campus Executive Vice Chancellor Earl Cheit and Mrs. Cheit at the official opening of the traveling show at the Harmon Gymnasium in Berkeley last month. A model of MP division's Electron Prototype Accelerator and a color panorama of Los Alamos are featured in the display. The Caravan which portrays 100 years of University history and achievements is now showing in Bakersfield after well-attended four-day stands in Sacramento, San Jose and Berkeley. Other stops will be made this month at the Orange County Convention Center, Santa Monica, San Diego and Pasadena.

BACK COVER:

Pewee I, the Los Alamos Scientific Laboratory's new test-bed reactor, is loaded into a container on the bed of a "lowboy" trailer before being transported to the Nevada Test Site. The Laboratory borrowed the custom-built combination from Westinghouse. It was a first for LASL in that all of its previous reactors had to be disassembled for shipment to Nevada.